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ORIGINAL LECTURES.

ON INSUFFICIENT DIET, AND THE HYGIENIC TREATMENT OF OBESITY.[1]

A Lecture on Hygienic Therapeutics.

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GENTLEMEN: In a preceding lecture we have considered the bases of dietetics. We have also ascertained the sum of foods which suffice for the necessities of nutrition. When the daily diet becomes insufficient, there supervenes a series of phenomena described under the name of inanition, the effects of which have been so well described by Bouchardat and Chossat.

In inanition we see successively disappear fat and muscle, and man becomes *autophagic*—living on his own substance; the proportion of urea excreted diminishes every day; the temperature falls; and the individual soon succumbs to the progressive depravement of his organism.

This inanition may be due to several causes: sometimes it results from insufficiency of food; sometimes, on the contrary, the diet is sufficient, but special conditions of the economy oppose the healthful nutrition of the tissues. It does not enter into the plan of this course for me to consider the mechanism and causation of inanition, and I have only to point out the applications which may be made of spare diet in the treatment of disease.

Spare diet, or *negative diet*, as it has been called, has been recommended in the treatment of numerous affections. Valsalva urged its utility in aneurisms of the aorta; he employed in the treatment of these aneurisms a very heroic method, which was based on abstinence and bloodletting. The patient was allowed only half a pint of soup in the morning, a little less in the evening, and no drink but water flavored with quince jelly. To this was added repeated venesections, and this treatment was continued until the patient was so reduced as to be unable to leave his bed, or even raise his arms. If certain medical authorities[2] have reported cases of cure by this method, it must be admitted that the failures have been so numerous as to stigmatize this system as detestable, and he would be a foolhardy man who would propose it in our day.

From aneurisms of the aorta the transition was easy to what has been described as *aneurism of the heart*, and which was nothing, but hypertrophy of this organ, and we have seen Corvisart and even Laennec vaunt the advantages of spare diet in the treatment of affections of the heart. I have no need to insist here on the perniciousness of this treatment, which, if carried out, could only aggravate the troubles of the circulation in cardiac patients.

The spare diet regimen has also been employed in diathetic affections, and it is especially in the treatment of syphilis that clinical authorities have made use of what has been described under the name of *cura famis*. Ulrich von Hutten, in 1677, and afterward Astrac treated syphilitic diseases by guaiacum and low diet. For about two months the patient was confined in a room where no food was allowed him but a little bread, a few grapes, a little chicken broth, and he was still further debilitated by successive sweats. In this vegetable treatment, so extolled by the antimercurialists, guaiacum and the other sudorific medicaments played only a secondary part, and it was chiefly the severe dietary regimen to which the patients were subjected which was regarded as the curative element. This mode of treatment has been taken up again in our day in Sweden, and we have only to go back to 1811, to find Osbeck, of Stockholm, physician to the Hospital St. Seraphin, claiming that by this means he could arrest the most stubborn manifestations of syphilis.

Lastly, surgeons, and even obstetricians, have utilized the low diet system; the former to cause fatty tumors (lipomata) to disappear, the latter to reduce the volume of the fœtus in some cases of narrow pelvis, so that parturition might be more easily accomplished. Although Merriman, Baudelocque, Moreau, and even Depaul, have reported cases where wonderful results of this kind have been obtained, I confess that I believe it to be a dangerous method, which, while having but a hypothetical value in diminishing the size of the child's head, must considerably debilitate the mother, and place her in unfavorable condition for a successful delivery, and a good convalescence.

To these supposed advantages derived from low diet, we may add the hypothetical influence of abstinence in promoting absorption of certain inflammatory products. I have seen my master, Nonat, employ frequent bloodlettings and low diet, with the intent to "discuss" perimetric phlegmons. It has been supposed that pleuritic and other effusions might be made to disappear more rapidly by "starving" the absorbents. But all these methods are to-day abandoned, as both useless and pernicious.

In applying a spare diet regimen to the treatment of obesity, more logical good sense has been shown. Nothing seems to be more reasonable, for one of the first effects of inanition is to cause consumption of the fat which has accumulated in the tissues.

The etiology of obesity is very complex. I cannot here enter into all the details connected with this vexed question of pathogeny, and what I have to say under this head will be brief; for a more complete consideration of this subject, I must refer you to an important

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[1] Translated, from advance sheets, by E. P. Hurd, M.D., of Newburyport, Mass.

[2] Notably Stancario, of Bologne; Luke, of London Hospital; Pelletan, in France.

chapter on the "Pathogeny of Obesity," in Bouchard's work on *Diseases by Retardation of Nutrition*.[1]

The diet has very much to do with obesity, and we have first to note the important *rôle* which fatty foods have in the production of polysarcia. In this respect all physiologists are agreed, and if each animal species makes its special fat, adipose tissue is derived chiefly from fatty substances ingested, and the recent experiments of Debove confirm fully this view.

Fat is also derived from carbohydrates, and here zoötechnic experiments are absolutely demonstrative, most animals fabricating their fat out of amylaceous food substances. Lastly, fat may also be formed from azotized food; and Henneberg has shown that an ounce of albumen may furnish half an ounce of fat. But we are not to look for the sole cause of obesity in alimentation, and if Etmuller was able justly to say, *In stomacho prima rudimenta obesitatis*,[2] it must be admitted that heredity has much to do with corpulence. There are families characterized by their obesity, and just as in zoötechnics we find varieties of animals that are more easily fattened than others, so among mankind we find lean races and races that naturally take on adipose development.

In those disposed to develop fat, this substance accumulates little by little in the cellular tissue, impedes the respiration and circulation, and hinders muscular exercise, so that the corpulent person eventually lives in a sort of vicious circle. The more the adipose tissue develops, the less exercise he takes, and the want of exercise favors *embonpoint*. But I am ready, with Ebstein, to admit that we must make a difference between obesity, properly so-called—that is, simple fatty deposition in the tissues—and fatty transformation or degeneration of organs.

Ebstein, in his work on obesity (lately published) divides into three periods of degeneration or retrogression the life of a corpulent person. In the first period the individual is *envied;* every one admires his corpulence. In the second period he is a being that is laughed at; he is a Silenus, a Falstaff, or some other big-bellied hero of a comedy. In the third period the obese person becomes an object of commiseration; he is a patient whom everybody pities.

Obesity may be general, but oftener it is met with in that partial and limited form in which great ventral development is coincident with small or ordinary sized limbs and a moderate thorax. There are three factors in this abdominal *embonpoint:* accumulation of fat in the omentum and abdominal walls, distention of the intestines and stomach, and weakness of the abdominal walls, which readily yield to the pressure resulting from these two causes. Brillat-Savarin, who has given us a curious chapter on obesity and its treatment (see his *Physiologie du Gout*), calls those affected with this kind of corpulence gastrophorous or big-bellied, and says of himself that though enormously "pot-bellied," yet his arms were well muscled and graceful, and his legs were as slender as those of an Arab steed.

To combat obesity three sorts of means have been advised; pharmaceutical means, exercise, and a special diet. I shall first consider the dietetic treatment.

From early antiquity attempts have been made to oppose obesity. The Grecians, in particular, who attached so much importance to beauty of person, multiplied means to diminish corpulence, and Hippocrates in his numerous writings returns repeatedly to the subject. Permit me to transcribe one passage from Hippocrates which is of great interest as pointing out one principle in the treatment of obesity on which Ebstein has so much insisted of late years. I refer to the use of fatty food in the dietary of the corpulent. This is the way in which the Father of Medicine expresses himself on this subject: "Fat people, and all those who wish to become lean, should do much hard work while fasting, and should take their meals while still fatigued, and without resting, and after having drunk a little weak wine: their meats should be prepared with sesamum and suitable seasoning, *and should be fat;* in this way appetite will be satisfied with a smaller quantity. The obese person should eat but one meal a day, should not bathe, should sleep on a hard bed, and should walk as much as possible."

You will find, moreover, in the interesting and curious thesis of Worthington,[1] a multitude of references which show how much this question of obesity interested our ancient forefathers. At the same time, it is not til of late years that the treatment of obesity has taken a definite scientific shape, and it is to Dancel, a French military physician, that we are indebted for the first principles of the new therapy of corpulence. Dancel's first writings appeared forty years ago. This physician, who belonged to a regiment of cavalry, had remarked the influence of water and frequent drinking on the development of the abdomen of horses, and he had deduced from these observations one of the fundamental bases of his hygienic treatment, which consists in reducing as much as possible the water of drinks and of food. He permitted only one, or at the most two, glasses of liquid with each meal, or a quantity scarcely exceeding half a pint. He discarded soups and aliments containing a considerable quantity of water; he suppressed also from the diet all fats and starchy food, frequently purged his patients, and made them take long walks daily.

In an interesting communication made by my friend Constantin Paul,[2] and from which I have drawn largely for material for this lecture, he has shown the progress of a case which he has watched since 1876, and in which the method of Dancel has caused a very marked reduction of weight, only by dint, however, of carrying out the treatment with rigorous exactness.

Dancel's method has been adopted in England, where it has taken the name of Banting's method, in honor of the patient who first put in practice this treatment, and published the report of his own case. This individual was a man sixty-five years of age, by the name of Banting, five feet six inches in height, and weighing, in August, 1862, two hundred and two pounds. Banting submitted to the Dancel regimen prescribed by his phy-

[1] Bouchard: Maladies par ralentissement de la Nutrition, 2d ed., 1885, p. 107.

[2] Obesity originates in the stomach.

[1] On Obesity. Thèse de Paris, 1878.

[2] On the Treatment of Obesity. (Bull. et Mém. de la Soc. des Hôp., May 24, 1886.)

sician, Harvey, and with such success that in May, 1863, his weight was reduced to one hundred and fifty-six pounds.

I transcribe, literally, the account of the course pursued by this man to obtain diminution of his weight, from his "Letter on Corpulence addressed to the Public," published in London, 1874.

"*Breakfast* at 9 o'clock in the morning; five or six ounces of either beef, mutton, kidneys, broiled fish, bacon, or cold meat of any kind except pork or veal; a large cup of tea or coffee without milk or sugar, a little biscuit, or one ounce of dry toast; making together six ounces of solids and nine of liquids. *Dinner* at 2 P.M.: five or six ounces of any fish except salmon, herrings, or eels; any meat except pork or veal; any vegetable except potato, parsnip, beet root, turnip, or carrot; one ounce of dry toast; fruit out of a pudding not sweetened; any kind of poultry or game, and two or three glasses of claret, sherry, or madeira—champagne, port, and beer forbidden; making together ten or twelve ounces of solids and ten of liquids. *Tea*, at 6 P.M.: two or three ounces of cooked fruit, a rusk or two, and a cup of tea without milk or sugar; making two to four ounces of solids, and nine of liquids. *Supper* at 9 P.M.: three or four ounces of meat or fish, similar to dinner, with a glass or two of claret or sherry and water; making four ounces of solids and seven of liquids. A little unsweetened punch, or a glass of sherry, if desired, on retiring."

As you see, Harvey followed the method of Dancel, with some abatement in the quantity of food permitted. He allowed only 170 grammes (or 5⅔ ounces) of albuminoid matters, 10 grammes (or ⅓ ounce) of fatty matters, and 80 grammes (2⅔ ounces) of cabohydrates; while Dancel, on the other hand, gave the patient leave to eat all he wanted of articles of food which were not prohibited.

From England, this method passed over to Germany, where it was perfected, and, in the hands of Ebstein, Dancel's and Banting's system has undergone modification in a new direction. Struck with the fact that fatty substances are with difficulty assimilable, and that moreover they assuage both hunger and thirst, he permits them to his corpulent patients. This does not imply, as he rightly says in his work, that he treats obesity by a fatty regimen, but he simply restores to fat the rights which belong to it as an aliment.

This is the substance of Ebstein's regimen, which, in a man forty-four years of age, causes a very notable diminution in his obesity. He allows three meals, breakfast, dinner, and supper. Breakfast at 7.30 A.M. in winter, at 6 A.M. in the summer; a half pint of tea, without milk or sugar; one and two-thirds ounces of dry toast well buttered. Dinner, the principal meal, at 2 P.M.; soup of beef's marrow, four ounces of fat meat with some rich sauce, vegetables in moderate quantity. Ebstein forbids starchy foods, and vegetables containing sugar. As a drink, two or three glasses of light white wine, and after dinner a large cup of black tea without milk or sugar. Supper at 7.30 P.M.: a large cup of tea without milk or sugar, an egg, or a little roast beef well streaked with fat; an ounce of fine flour bread well buttered.[1]

In 1885 Professor Œrtel, of Munich, published a very complete work, in which this question of obesity is treated in its entirety. He makes a distinction, accepted by Professor Sée, between obese persons with fatty heart, and those who have no trouble of the circulatory apparatus; like Dancel, he suppresses from the dietary fatty matters and carbohydrates.[1]

Schwenninger, in applying the method of Œrtel to the son of the Grand Chancellor, gave it a great notoriety; but while adopting as a basis the precepts of Dancel, he considerably modified the method by the absolute suppression of drinks with the meals. The patient was not allowed to drink until two hours after meals; he was then allowed to drink all he wanted.

In two important communications made last year to the Academy of Medicine, Professor Germain Sée has taken up anew this question of the physiological treatment of obesity, and, like Œrtel, he makes a distinction between the obese with fatty degeneration of the heart, and those with sound heart.[2]

Prof. Sée, while sanctioning the reduction of fats, and especially of starches in the dietary of the corpulent, parts company with all previous authorities in allowing the free use of drinks, and especially of tea and coffee. He, in fact, considers water as denutrient, and thinks it promotive of the combustions of the economy. He thus sums up the treatment of obesity:

"1. The physiological regimen comprehends 120 to 130 grammes (4 to 4⅓ ounces) of azotized principles, derived from 250 to 300 grammes (8 to 10 ounces) of muscular flesh or of albuminoids; 100 to 120 grammes (3 to 4 ounces) of neutral fats, plus 250 grammes (8⅓ ounces) of carbohydrates furnished by 300 to 400 grammes (10 to 14 ounces) of starch or sugar; these proportions should be modified in such a way that the musculo-albuminous substances shall not much exceed the normal ration, for meat in excess, in breaking up, forms fat. The fats which are of easy digestion may without harm be used in the proportion of 60 to 90 grammes (2 to 3 ounces); the carbohydrates should be reduced to a minimum; as for herbaceous vegetables, they contain nothing nutritive.

"2. Drinks, instead of being suppressed should be augmented, in order to facilitate the gastric digestion, and promote general nutrition. It is necessary, however, to eschew alcoholic liquors, especially beer, as well as mineral waters; tea and coffee (drunk as hot as possible) may be used instead.

"3. Muscular exercise of all kinds is imperative on the obese; exception may be made of riding, which is passive exercise.

"4. Sweats, vapor baths, warm baths, and hydrotherapy in all its forms may present certain advantages.

"5. Among medicines the most useful are the iodides in small doses, and the sodic chloride waters, which act only temporarily. Alkaline waters and alkalies generally, which act so powerfully in the diabetes of fat people, have no well-defined action in ordinary obesity. Every other medicinal treatment is quite inefficacious."

Lastly, in a communication made to the Society of the Hospitals, my colleague, Albert Robin, has endeavored to lay down the rules which should direct the drink-regimen of the obese. You have, in fact, just seen how widely authorities differ on this point. While almost all physicians who have studied this question of obesity have adopted Dancel's view, and reduced to a

[1] Ebstein: On Obesity and its Treatment, 1883.

[1] Œrtel: Handbuch der Allgemein Therapie der Kreislaufs Hœrungen, Leipzig, 5th edition, 1885.

[2] Germain Sée: Traitement physiologique de l'obésité et des transformations graisseuses du cœur. (Académie de médecine, Sessions of 29th Sept. and 6th Oct., 1885.)

minimum the water to be taken with meals, even going so far as to proscribe it altogether, as Schwenninger has done; others, as Prof. G. Sée, permit drinks to be taken freely.

Albert Robin, after having verified on himself the experiments of Genth, and after having noted the augmentation of urea under the influence of increase of drinks, divides the obese into two classes: those attended with excess and those with deficiency of urea; this division he bases on the quantity of urea excreted daily. If the figure exceeds the average, the obesity is *with excess*, if less than the mean, it is *obesity with deficiency*.

In cases where the quantity of urea is an average, the clinician will be guided by what Robin calls *the coefficient of oxidation*, which is the relation which exists between the solid materials of the urine and the urea. If this coefficient is higher than the normal, the obesity comes under the first head (*i. e.*, by excess); if lower than normal, it belongs to the second class.

In all cases where there is obesity by excess, we should permit drinks, and even counsel them to be taken very freely; in all cases, on the contrary, where we have to do with obesity with deficiency of urea, the amount of drinks should be restricted. In support of this view Robin refers to several interesting cases in which the application of this method produced a notable reduction in weight. But it is worthy of note that all these patients, obese by excess or deficiency of urea, were subjected to an insufficient dietary regimen, which consisted in giving them from 300 to 400 grammes of meat, 100 grammes of fresh vegetables, and from 100 to 150 grammes of bread.

When once all these data are mastered, you will be able to compare these regimens and decide as to their relative merits. Whatever may be the method adopted, you will bear in mind that the regimen of the obese is always an insufficient regimen. Cast your eye over the following table, which I borrow from Constantin Paul's communication, and compare it with the normal regimen, the bases of which we have established, and you will find this conclusion force itself upon you.

AVERAGE REGIMEN OF THE OBESE.

Authorities.	Albuminoid matters.	Fatty matters.	Carbohydrates.
Voit	118	40	150
Harvey	170	10	80
Ebstein	100	85	50
Œrtel	155–179	25–40	70–110
Normal ration	124	55	435

This insufficient regimen explains why there is always autophagism in the obese; it is this self-consumption which causes the lessening of the obesity, and when you attentively examine each of these regimens, you see that by variable artifices they all arrive at the same end—reduction of the daily rations.

If Ebstein advises fatty foods, it is because they diminish the sensation of hunger, and by the satiety which they produce, they prevent the obese person from eating too much. If Dancel discards sauces and all condiments, it is because meats when well seasoned excite the appetite. If others, as Bouchard, order a uniform regimen of eggs and meat and exclude everything else, it is because the very uniformity of the regimen produces a certain fatigue of the digestive powers and a certain disrelish. If Schwenninger forbids the use of fluids at meals, it is because he knows well that it is difficult to eat without taking drink.

In a word, what you have to do is, by some one of the approved means, to diminish the alimentation of the obese, and especially to reduce to the minimum the quantity of amylaceous and hydrocarbonaceous elements of the dietary. It is for you to choose the regimen which seems most appropriate for the case which you have to treat.

The corpulent are, in fact, divided into two groups; the one are strong and vigorous, and are great eaters; the others, on the contrary, are weak and debilitated, with soft and flabby flesh. It is impossible to adapt the same dietetic regimen to both groups, and in his excellent article on regimen in sickness, the late Edward Smith insisted especially on this point.[1] Those of the first group may undergo all the rigorousness of reduced diet with impunity, those of the second group will only be injured thereby. You will be obliged then, as you see, to adapt your dietary regimen to the different cases.

As for drinks, you should take as your guide the indications furnished by Albert Robin; but if you may modify according to circumstances the quantity of water daily ingested, you ought absolutely to proscribe alcohols, and, as a general rule, allow only water. This is the opinion of our excellent friend and colleague, St. Germain, who has shown by an experiment made on himself, the happy influence of regimen and exercise in the treatment of obesity. St. Germain would allow neither bread nor wine.

To reduction of diet should correspond an increase of exercise. Here there is unanimity of opinion; eat little and work till greatly fatigued, are the essential points in the hygienic treatment. When I come to speak of gymnastics, of massage, of sudations, and of hydrotherapy, I will show you the happy effects of these agents in the cure of polysarcia. Among these exercises, I insist especially on the benefits of *the wall exercise*. The patient stands with his back firmly fixed against a wall, then he raises his arms above his head and keeps them firmly extended, at the same time swinging them back and forth, and describing a half circle. This exercise develops the abdominal muscles, and gives increased rigidity to the abdominal walls.

Lastly, there is a pharmaceutical mode of treating polysarcia, and we have seen vaunted the good effects of acids, and vinegar in particular, the Fucus vesiculosus, iodine, and the iodides. All these means have but a secondary place in the treatment of obesity, but it is not so with purgatives and alkalies.

Purgatives of whatever kind, and in particular purgative waters and drastic cathartics, are all applicable to the treatment of polysarcia. In fact, in corpulence the development of the intestine plays a considerable part, and by our purgatives we not only obtain for the patient the benefits of a "white bleeding," but we diminish the intestinal tympanism.

As for the alkaline waters, they have a real influence on the march of obesity, especially when they are slightly purgative. There are special treatments for reduction and emaciation practised at Driburg, at Ems, at Kissin-

[1] Edward Smith: On Diet in the Treatment of Disease. Lancet, May 14 and 21, 1864.

gen, and especially at Carlsbad and at Marienbad. Note that in all these stations, besides the administration of the waters and a rigorous diet, joined to prolonged exercise, the presiding physicians make their patients take "reduction pills" or powders, which all consist of drastic purgatives.

In France, Philibert, who was able to test on himself the good effects of the reducing treatment of Marienbad, has instituted at Brides, in Savoy, a course of treatment similar to that pursued in Germany.[1]

To sum up, this is my usual procedure: I begin by a thorough examination of the patient who claims my care for the cure of obesity. I take note whether there exists in him any organic vice which explains or complicates the obesity; for, as Bouchard has well remarked, in a great many cases the polysarcia constitutes a secondary disease. I examine attentively the heart and circulation; fatty degeneration of the heart is, in fact, a complication which is often found in the polysarcous, and the existence of such degeneration should considerably modify the rigorousness of our treatment. When once these points are settled, and after having satisfied myself as to the soundness of the organs, I order the following regimen:

As for drinks—either the patient drinks at his meals, or he pledges himself to drink nothing at all at meal-time. In the first case I limit the quantity of liquid to a tumblerful and a half, or about ten fluid-ounces. This drink shall consist of red or white wine, diluted with an alkaline water, Vals or Vichy. In the second case—*i.e.*, where only drinking between meals is practised—the patient may drink more abundantly, but he must drink nothing until two hours after meals; then he may take weak tea without sugar. I proscribe absolutely beer, bitters, and spirits. In some cases I allow a little strong coffee after breakfast.

As for foods, I forbid soups, and authorize fish, eggs, meat, green vegetables and fruits, but I reduce to a minimum starches.

As for bread, I prefer the light baker's loaf of which the crust forms the principal part, such loaves as are known in Paris by the name of "Peter's flute bread;" the American rusks and light pilot biscuits are also to be commended, while pastries should be utterly interdicted.

I require that the patient shall weigh all his food, and that he shall keep within the following limits:

Breakfast at 8 A.M.: one ounce of bread; two ounces of cold meat (ham or beef); seven ounces of weak tea without sugar. Lunch at noon: two ounces of bread, three ounces of meat or ragoût, or two eggs (the egg without its shell weighs from eleven to twelve drachms); three and one-third ounces of green vegetables, half an ounce of cheese; fruit *ad libitum*.

Dinner at 7 P.M.: two ounces of bread, three and one-third ounces of meat of some kind, or ragoût, four ounces of green vegetables, half an ounce of cheese, fruit *ad libitum*.

I join to this treatment the employment of purgatives, whether under the form of purgative waters, or of laxative pills or powders. I order physical exercise appropriate to the subject, and lastly, I enjoin massage.

I have obtained remarkable results from this regimen. Only a short time ago I saw, with Dr. Francis, at Ivry, a man thirty-five years of age, of short stature, and weighing two hundred and fifty pounds. This patient had arrived at such a state of corpulence that life was to him a real burden and a difficulty; moreover, he had got into a torpid state which nothing could overcome. All the functions of the economy seemed to be impeded, and asphyxia was imminent. To-day this man, by following my regimen, is sixty pounds lighter, and he is still losing several pounds a week. You will find this interesting case reported, along with others, in the thesis of my pupil Geoffroy.

Are we always as successful as this? Unhappily, no! Age, in fact, plays a considerable *rôle* in the prognosis of obesity, and by as much as you are warranted in assuring a cure in patients under thirty-five years, by so much will you be likely to find your efforts of little or no avail if your patient has attained the age of forty-five or fifty years. The results of treatment depend also on the cause of the obesity, a disease which is generally secondary; the pathogeny of obesity is not limited to one or two causes, and for that very reason it resists more or less the treatment directed against it. The state of histological integrity of the organs should influence your prognosis, and when, for instance, there is fatty degeneration of the heart, you can do nothing by a reducing treatment, which is a treatment of inanition, and is sure to enfeeble and damage the heart, and thus shorten the life of the patient. Lastly, the result of the treatment will depend very much on the willingness of the patient to comply strictly with all the rules of the regimen prescribed. You should, in fact, never forget that in undertaking the treatment of obesity it is not enough simply to lay down precise and rigorous regulations; you must see that these are carried out, and this will often be a trying and difficult matter; for the obese person, notwithstanding his great desire to become thin, easily tires of the regimen which you prescribe, and as soon as he obtains a slight amelioration, he is very likely to transgress, and go back to his former diet, and in a few days all your gain, so dearly purchased, is lost.

Such, gentlemen, are the indications which I desired to furnish relative to the treatment of obesity. In the next lecture I shall consider the opposite side of the question, and shall take up the subject of superabundant diet.

[1] Philibert: Du Traitement de L'Obésité et de la Polysarcie. (Thèse de Paris, 1874, No. 345.)

ORIGINAL ARTICLES.

LAPAROTOMY IN THE TREATMENT OF SPONTANEOUS GLUTEAL AND SCIATIC ANEURISMS.

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THE surgical treatment of spontaneous gluteal and sciatic aneurisms has always been extremely unsatisfactory. The results of the various operations for the cure of this special form of aneurism have been attended with a high rate of mortality. The reasons for failure and the fatality by the older operations were obviously due to causes which may be said to be avoidable at the present time. Among the obstacles to a successful issue in the treatment of gluteal

aneurism by former methods may be mentioned the occurrence of secondary hemorrhage, the presence of purulent œdema of Pirogoff in the subperitoneal tissue, the puncture of the veins and injury to important structures owing to the limited space, the ligation of the ureter, the onset of peritonitis, the formation of pelvic cellulitis, and other like complitions which made the mortality upward of fifty per cent.

The present unsettled opinion among surgeons as to treatment of this aneurism indicates that as yet no unanimity exists, and a review of the various methods which have been recommended, clearly demonstrates how wide is the breach. For example, Mr. Timothy Holmes in his college lectures claims that in gluteal aneurism the operation of Antyllus or Anel offers the best chances of success. In five cases in which the operation of Antyllus was performed four recovered and one died, and of four cases in which the operation of Anel was performed two recovered and two died; thus showing a death-rate of thirty-three per cent.

Fischer, of Hanover, concludes that the operation by injecting perchloride of iron into the sac affords the best chance of success. In six cases in which this operation was resorted to, four recovered and two died, thus giving a death-rate of thirty-three per cent.

Ribert recommended proximal pressure on the aorta, and direct compression over the sac. This was tried in one case. The patient's condition improved; but in a few months the aneurism returned and the patient died.

Hamilton recommended ligation of the internal iliac artery by an incision parallel with Poupart's ligament, and pushing back the peritoneum. In eleven cases in which this operation was performed, six recovered and five died, thus giving us a rate of mortality of about forty-four per cent.

The plan of treatment by rest and expectancy has been suggested by several authors. This method was adopted in six cases, five of these died and one was cured, but only temporarily, as the aneurism returned in a short time.

Galvanopuncture has also been recommended, but in the one case in which this method was tried the case terminated fatally.

It is evident, therefore, from an examination of the treatment at present in vogue that much is to be desired in the way of perfecting a plan of treatment which will permanently cure the aneurism, and at the same time reduce the present high rate of mortality. Nothing is to be expected from non-interference.

Gluteal aneurism, as a rule to which there is but one recorded exception, progresses steadily and rapidly to certain death from hemorrhage. Among all writers this opinion prevails, and among all the cases of gluteal aneurism which have been collected from various sources there is only one case in which a spontaneous cure has taken place. When the great difficulties of a positive diagnosis from other diseases is taken into consideration, the one recorded case of spontaneous cure admits of doubt; but still, on the other hand, it can be said that the anatomical relations of gluteal aneurism afford certain conditions favorable to the accomplishment of this object. Whether it is admitted or not that spontaneous cure ever occurs, no surgeon can place any reliance upon this process of cure, and refuse, on this account, to take active steps to cure the disease.

The performance of laparotomy as an initiative and necessary step in the ligation of the internal iliac artery seems to meet the exigencies of the case. That laparotomy may appear to be a severe measure as a preparatory step no one can deny; but, while it may seem a desperate measure, it must be remembered that the disease is a uniformly fatal one, and, therefore, calls for heroic measures to overcome the dangers which await the patient.

After carefully reviewing the literature of spontaneous gluteal aneurism, and investigating the high rate of mortality following the operations for the cure of this variety of aneurism, and after considering thoughtfully the unsatisfactory results and the causes which brought about these results, there seemed much to be desired in reference to an operation which would effect a permanent and radical cure, and which would diminish the high rate of mortality. With these important questions in mind, a new operation was necessary to make the treatment of gluteal aneurism satisfactory.

With a view to the settlement of the first question, namely, the accomplishment of a permanent and a radical cure in gluteal aneurism, it would seem that the application of the principle of John Hunter in the treatment of aneurism in general would be especially adapted to this form of aneurism. The ligature of the main artery on the proximal side in healthy arterial tissue yields the best results. The principle of compression is not applicable here, though in the form of Esmarch's bandage in certain aneurisms this plan has met with most brilliant success. The injection of coagulating fluids into the sac, and all the other operations are obviously not suited to the gluteal aneurism. While in theory and practice the Hunterian method is the best operation in those forms of aneurism in which compression by elastic bandage is inadmissible, the same principle holds good in gluteal aneurism. If it can be shown that the ligation of the internal iliac on the proximal side of the aneurism can be performed with immunity from those accidents which have caused death, the difficult problem of a safe and permanent method of cure has been solved. It remains, therefore, to show that when the Hunterian operation has been performed the causes of death have been attributed to certain defects in the method of ligating the internal iliac artery, and that if any plan can be adopted which will not only effect a radical cure in the aneurism, but at the same time which will be free from danger to the patient, an ideal operation has been established for the treatment of this fatal disease.

An examination into the causes of death after ligation of the internal iliac artery, shows that in the majority of the cases death resulted from secondary hemorrhage, laceration of the peritoneum, wound of the contiguous vessels, tying the ureter, pelvic cellulitis, abscess, and purulent œdema. In

other words, excluding uræmia, nearly all the deaths may be attributed to some fault in the method of operation in the surgeon's attempt to secure the internal iliac artery.

If now it can be demonstrated that the internal iliac artery can be reached and ligated without incurring the risks common to the older operation of Abernethy or Cooper, the science of surgery can point to a means of saving life in these desperate cases, where heretofore human lives were sacrificed.

No argument is needed to prove that the internal iliac artery can be tied with safety and with no damage to the surrounding and adjacent structures, if the surgeon can pass the aneurism needle around the vessel with all the pelvic viscera removed. This is obvious; but the question upon which everything hinges is the safety of the opening of the peritoneal cavity and removal of its contents, in order to expose the artery. If this procedure can be proved to be free from danger, then the complete operation in each of its several stages will form a new method of cure for the relief of spontaneous gluteal aneurism, which cannot but commend itself to the sound judgment of every surgeon.

With regard to the proof of the safety of laparotomy, as a preparatory step to ligation of the internal iliac artery, for the application of the Hunterian principle in the treatment of spontaneous gluteal aneurism, it becomes necessary to study the rate of mortality attending an ordinary laparotomy. A reference to the statistics of laparotomy will not afford reliable data from which to draw conclusions; because, if the laparotomy is performed for ovariotomy, the death-rate has become so low that it need not offer any barrier to the operation. A reference to Lawson Tait's one hundred and thirty-nine consecutive ovariotomies without a death, is corroborative of this statement. On the other hand, if the laparotomy is performed for gunshot wound, or stab wound, or intestinal obstruction, or malignant disease, the death-rate is comparatively high, and thus the mortality of laparotomy would preclude the adoption of this measure as a preparatory step to tying the internal iliac artery. A laparotomy in which the contents of the abdominal cavity are removed, is an operation of greater severity than most ovariotomies and of less severity than abdominal section would be in perforating wound of the abdomen, or in intestinal obstruction. Laparotomy for removal of a portion of the intestinal canal, however, has one very favorable condition, and that is the absence from shock, as is the case where abdominal section is attended with a high rate of mortality.

Laparotomy as a preparatory step to ligation of the internal iliac artery for the cure of spontaneous gluteal aneurism thus may be said to stand midway between these two extremes with regard to its mortality. In the future, as the technique of abdominal section improves, the small fractional death-rate which now attends the operation will be reduced to that of a simple oöphorectomy, which is practically no death-rate at all. In the laparotomies which I have performed I have never had a patient die during the operation; but, invariably, I have noticed that the symptoms were improved after the operation. In the cases of perforating wound to which this statement is applicable, it must be remembered that shock existed before the laparotomy, and that in those cases where an exploratory laparotomy was performed without the presence of shock, the patients invariably reacted, and their condition was in every respect satisfactory as regards the reaction.

Laparotomy performed under suitable antiseptic precautions, and in a patient whose condition before the operation is in every way satisfactory, may be said, in the light of present statistics, to be free from any danger which would render it inexpedient to perform the abdominal section.

When the paramount advantages are considered in regard to the safe ligation of the iliac arteries, and with an immunity from all other accidents so common by the older methods, laparotomy as a preparatory step to securing safely the internal iliac artery in this special form of aneurism seems to be an ideal operation for the cure of a surgical disease which formerly was attended with a death-rate of nearly fifty per cent. The internal iliac artery has been tied four times for spontaneous gluteal aneurism; three of these aneurisms occurred in my hospital service during the past year, and one of which belonged to Dr. W. Locke Chew, of Alabama. The history of each of these operations will be given with remarks.

CASE I. *Double gluteal aneurism; laparotomy, and ligation of both internal iliac arteries simultaneously; death from suppression of urine on the fourth day.*—I. McC., æt. sixty, admitted to St. Vincent Hospital February 5, 1886. Patient was sent by Dr. Carpenter, of Boonton, New Jersey. Patient has always enjoyed good health until three years previous to date, when she complained of pain along the course of the sciatic nerve upon the right side. The pain was not relieved by medication, either general or local. A year and a half later a swelling became apparent on this buttock, which was accompanied by throbbing, and the tumor steadily increased in size, with no abatement of the pain. As these symptoms increased, the patient began to lose flesh and strength. The diagnosis of gluteal aneurism was made by Dr. Carpenter.

Upon admission to St. Vincent Hospital there was found a large, tense, pulsating tumor occupying the entire gluteal region, and tapering down to the trochanter major of the right femur. The skin over it was natural in color, but very tense; a thrill was felt on palpation, and a distinct bruit heard on auscultation; pulsation very marked. Tumor measured thirteen inches from the tuberosity of the ischium to the trochanter major. On the opposite side, measurement from the same points seven inches. Right leg was somewhat swollen and œdematous. On the left buttock a slight tumor was found on palpation. It was situated along the course of the gluteal artery at about its middle. A distinct pulsation was here felt, accompanied by a bruit. Patient had pain here for a week before she was admitted to the hospital, and now feels a throbbing in the same situation. Good nourishment was

given, and stimulants were administered according to indications.

February 15th, patient has improved somewhat in general health, but pain still continues.

Operation.—February 18, 1886, the abdomen, perineum, and thighs were thoroughly scrubbed with warm water and soap. After this ablution the parts were irrigated with a solution of bichloride of mercury (1 : 1000). Especial attention was given to the purification of the umbilicus, which is most important to observe in all cases of abdominal surgery, as infection has been known to originate from a neglect of this precaution. The hair was cleanly shaven from the abdominal wall. A saturated solution of ether and iodoform was now poured over the abdomen, and the parts were thus made aseptic. Clean towels, wrung out in warm bichloride, were now placed over the abdomen, and the ether was administered.

In all capital operations requiring the patient to be kept under ether for any indefinite length of time, I have always adopted the rule of making the parts aseptic before the patient is anæsthetized. This saves the time during which it is necessary to keep the patient under ether, and in abdominal surgery especially this is important; because the surgeon can never form an idea of how long it may take to complete the operation. I have never found that the disinfection of the parts ever caused any discomfort to the patient; but, on the other hand, it often attracts the attention first before taking the ether. In this way the time during which the patient must take ether is shortened by an appreciable period of time.

The median incision was made, beginning at the umbilicus and extending downward to the symphysis pubis. Each layer was divided under continuous irrigation, and all vessels were ligatured, and the peritoneum was now exposed, which was carefully divided the length of the cutaneous incision. Everything was now in readiness for the removal of the intestine, and the hand was introduced into a warm solution of bichloride of mercury (1 : 5000). Towels and the elephant-ear flat sponges were now dipped into this mild warm antiseptic solution, and the contents of the peritoneal cavity were removed outside of the wound and wrapped at once into these towels and sponges, which were renewed from time to time to keep up equable and uniform temperature. Having removed the pelvic viscera as far as was necessary, my index finger felt the pulsation of the aorta, then the common iliac, then the external and internal iliacs. The peritoneum and the sheath were scratched and divided only sufficiently to admit the point of the aneurism needle. With scarcely any disturbance of the parts, the ligature of twisted catgut was passed around the vessel from within outward, care being taken not to include the ureter, which was double upon this side, as well as other important structures. The same procedure was immediately performed with reference to the other internal iliac artery; a little iodoform was dusted over the ligatures, and the intestine was now carefully returned into its proper cavity, and the peritoneum, deep fascia, muscles, aponeurosis, and the two layers of superficial fascia, with the skin were united by catgut and silver sutures. The entire incision was then dusted over with a thin layer of iodoform, and the superficial drainage tubes were introduced; but no tube was used to drain the cavity. The patient was under ether only about thirty minutes. I am indebted to Dr. Charles Phelps for his kind assistance and advice during the operation. The patient was removed to an adjoining room, and placed in bed.

4 P. M. Patient has not come fully out from the ether, as yet; moans continually, and is very restless. Pulse fair force, temperature normal. External heat applied to body, and morph. given hypodermatically. During the evening reacted nicely from the shock.

19th. Patient in a condition of mild delirium; temperature elevated; tongue dry; pulse rapid and feeble. Nutrient enemata given; morph. hypodermatically; water drawn by catheter.

20th. The dressings were removed and wound was perfectly aseptic. No tympanites; tongue dry and brown; temperature elevated. Peptonized milk given by enemata, also one drop tincture of digitalis every two hours.

21st. Patient sinking steadily, and vomited several times during day. The rectal temperature one degree lower than in the axilla.

22d. Patient died to-day.

Autopsy.—Rigor mortis well marked. On removing the dressing the abdominal wall had healed by primary intention. There was a little pus in the pelvis, about one of the ligatures, probably the result of her poorly nourished condition; the amount was very small, and there was lymph exudation. There was no peritonitis. The incision over the right buttock exposed the aneurismal sac extending from the origin of the gluteal from the internal iliac to a point below the trochanter major. An aneurism was found also upon the opposite hip. The aneurism upon the right side was very large, and was filled with laminæ of fibrin. The sac had, previous to operation, ruptured upon its inner surface, and had produced erosion of the ilium. The aneurism upon the left side was fusiform in shape, and was about four inches in length. The iliac vessels were both occluded by thrombi, and the ligatures included nothing but the internal iliac vessels. The kidney upon the right side had two ureters extending to the bladder. The kidneys showed a mild grade of diffuse parenchymatous nephritis. The suppression of urine was in all probability due to the acute congestion produced by ligation of the internal iliac arteries, and this condition was engrafted upon a chronic disease of these organs. The specimens are preserved in the museum of the Carnegie Laboratory.

Remarks.—There are some points of special interest connected with this case that seem to be worthy of consideration. The patient's mother, who is alive, is now considerably over one hundred years, and the patient herself was over sixty years. The aneurism was not single, as is the rule; but was double. This is the first case ever reported with both gluteal aneurisms developing simultaneously. The case is also the first one in which the internal iliac has ever been ligated with laparotomy as a preparatory step. It is also the first time in

the history of surgery that both internal iliacs have been tied at the same time. The patient reacted nicely from the operation, thus showing that even in a patient of sixty years a laparotomy can be performed without serious shock.

Another clinical fact of interest in connection with this case is the perceptible diminution of temperature in the rectum, as compared with the axilla. This is due, without doubt, to the fact that all the pelvic organs were poorly supplied with blood in comparison with the amount previous to the ligation of the internal iliac arteries.

CASE II. *A case of spontaneous gluteal aneurism, diffused by manipulation; laparotomy; ligation of the internal iliac; cured.*—(By W. Locke Chew, M.D., of Birmingham, Ala.) W. T. S., a negro, aged forty-six years, a native of Georgia; residence for fourteen years in North Alabama; occupation an iron-ore workman, gives the history that seven months ago while going rapidly upstairs, felt a sudden stitch in the buttock and back part of the thigh. This pain was very intense at times, but never wholly absent. For the past seven weeks has been unable to walk, and the past four weeks has been confined to bed. About two and a half months ago noticed a marked swelling of right gluteal region, which "thumped as if my heart beat there." Dr. Cooper was called to see the case, and treated it only palliatively. Suspecting the tumor to be aneurismal, I was called to see the case in consultation with Dr. Cooper, on the morning of June 14th, at 11.43 A.M., and found the patient as follows: Right thigh flexed on abdomen and leg on thigh, adducted, and toes everted, violent spasms of the muscles of the calf and foot, considerable spastic rigidity of same parts; less violent muscular spasms in the posterior portion of the thigh; gluteal region of right hip very much distended, tense, and firm. Tumor as large as a fœtal head at sixth month. No increase in local warmth. On grasping tumor evenly with expanded hands, and making gentle pressure there was detected a very slight, indistinct, wavy expansion. Auscultation over tumor revealed an obscure bruit, but at the sacro-ischiatic notch and slightly lower a loud, grating bruit was noted. By pressure on the abdominal aorta both bruit and expansion could be readily stopped.

Dr. Cooper here gave the history that the swelling had been circumscribed, and thought it probable that it had been ruptured the day before by manipulation at the hands of a friend he had invited to see it. The diagnosis being arrived at, nothing more was done than to order the patient's bowels thoroughly opened by salts and warm enemata; the patient thoroughly washed, and clean linen placed on him and the bed; the room, a new one, was rendered as neat as possible. It had been necessary to administer twelve grains of morphia sulphate in the preceding twenty-four hours to secure the least quiet.

On the morning of June 15th, in the presence of Drs. Wheelan, Dozier, Dnncan, Wyman, Shoemaker, Drennan, Dr. Brice M. Hughes and myself assuming the case—which Dr. Cooper kindly proffered us—immediately proceeded to do a laparotomy to secure the internal iliac artery for relief and cure of the aneurism. The patient being anæsthetized, and the abdomen being shaved and thoroughly cleansed, the usual curved, lateral incision was made. The muscles and fascia having been divided carefully, at the inferior angle of the incision, the epigastric artery, displaced a very little to the right, was seen pulsating strongly, which was doubly ligated before section. The peritoneum was carefully divided on the finger as a director, and the hand was passed into the abdomen. The arteries could be felt in their usual places pulsating strongly, trunks in good condition. That of the common iliac was normal, while that of the internal iliac was about two inches long, the trunk large, and the walls in fine condition. The aneurismal tumor did not extend into the pelvis. Such being the condition, we determined to place a strong silk ligature on the internal iliac. So violent were the efforts of the patient, and such the difficulty of manipulation within the cavity that a few coils of intestines were taken out and swaddled in cloth, saturated in a warm carbolized solution. While I exposed and guarded the parts, Dr. Hughes divided the arterial sheath, which I separated from the trunk as he passed the armed needle. The ligature was then tightened, and all present satisfied themselves that all blood-flow through the tumor was checked. The artery was then firmly ligated, and the peritoneum approximated over the ligature. The cavity was next thoroughly cleansed and closed by six deep silver-wire sutures and six small superficial catgut sutures. There were a few points in the divided muscles that gave us a little trouble from oozing, but this was controlled by warm water and torsion. The incision was dusted with iodoform, while adhesive strips to support suture, antiseptic cotton, and binder applied evenly constituted the dressing.

Progress of the Case.—Morphia sulphate in quarter-grain doses were administered every four hours subcutaneously. Crushed ice with a little milk was allowed during the first week; patient kept in the dorsal-decubitus position strictly. The temperature on the evening of the operation reached 100.5°, but never again reached that point; after the evening of the fifth day it was absolutely normal; pulse ranged from 90 to 108. The incision united by adhesion throughout, and the dressing, which was removed on the sixth day, was perfectly clean, except at a single point where there was a clot of dried blood as large as a split pea. Sutures removed on the ninth day, union firm. A free, natural movement of the bowels on the tenth day. A small abscess formed on the thirteenth day, a little to the right of the incision, due to the hemorrhage from the veins above mentioned, most probably; all pain immediately stopped in the tumor, and it has gradually diminished in size and tenseness. The condition of spastic rigidity never returned after recovery from the anæsthetic, nor did the muscular spasm; leg became freely movable after the tenth day. On the twentieth day tumor about one-third of original size. Patient walking on crutches, free from pain, cured.

In reviewing the history of this interesting case as it is given, it seems that the operator did not intend, before the operation, to do a laparotomy in the sense of removing the contents of the peritoneal cavity as a preparatory step to the ligation of the internal iliac, but that this most important feature of the whole plan was an after-thought, or the result of an accident. The incision which he mentions as "the usual curved lateral incision," must be either Sir Astley Cooper's or Abernethy's, as it is not the one which would be made if it were intended first to remove the intestine before ligating the artery. Later on the operator mentions, "so violent were the efforts of the patient, and such the difficulty of manipulation within the cavity, that a few coils of intestines were taken out," thus giving his readers to suppose that it was not his intention to remove the intestine, which is the main feature and first stage of the operation of tying the internal iliac artery by the new method. It is the intentional removal of the intestine by the median incision, for

the purpose of fully exposing the pelvic vessels, that laparotomy is recommended as a preparatory step. The case, however, stands as one of the few successful, and places on record another case of cure of a spontaneous gluteal aneurism by the application of the Hunterian principle.

The friendly criticism which I have offered in no way detracts from the credit due to the operator or to the successful issue of the operation, but it has been made only to impress clearly the fact that the great object of the laparotomy is to remove the contents of the peritoneal cavity, and thus enable the surgeon to ligate the vessel without incurring any of the risks so common by the older incisions and by the older methods.

As many of the causes of death in these cases of ligation of the internal iliac artery are due to the fact that the operation cannot so safely be performed without the removal of the intestine, it therefore follows that the removal of the intestine preparatory to ligating the vessel is an essential feature in the entire plan to be carried out in the treatment of gluteal aneurism.

CASE III. *Gluteal aneurism, associated with an aneurismal varix; laparotomy; ligation of left internal iliac artery; recovery.*—M. F., aet. eighteen, domestic; admitted to St. Vincent Hospital, August 26, 1886. Family history good and no evidence of specific disease. Patient has noticed for many years that her left buttock was much larger than the right, and that in this enlarged buttock she experienced a good deal of pain. Until three weeks previous to admittance to hospital, patient was able to work about; but at that time the skin became ulcerated over the left buttock. The patient now began to have great pain, and was unable to assume the sitting posture. Whenever she tried to sit down she felt a throbbing in the tumor.

On admission patient is well nourished and muscular. Complains of heat, throbbing, and pain, but more especially of the latter, which is no longer localized, but shoots down toward the knee. She states that her bowels are usually constipated, but in other respects physical condition is good. Heart and lungs normal.

On examination the left buttock is found to be considerably enlarged, the ulcer mentioned above being situated about the centre of the tumor. The veins are visibly dilated, those situated at the most dependent part of the tumor are markedly engorged, and upon gentle palpation the blood is felt surging through the vessels, which shows that a communication exists between the artery and the vein. With each systole of the heart an expansile pulsation is quite evident. Upon auscultation a very loud bruit is heard, which follows closely upon the first sound of the heart.

Examination by the abdominal wall and rectum negative.

Aug. 27. Potassæ iodidi grs. xv t. i. d.; liq. morph. n. s. ʒj, when needed.

Sept. 7. Examination of urine negative. Pil. colyc. co. iij. Light breakfast.

8th. Patient etherized. Abdomen thoroughly cleansed and shaved. An incision was made in the median line, starting at the umbilicus and extending downward to within two inches of the symphysis. Having dissected down to the peritoneum, all the vessels that required attention were ligatured. The peritoneum was now lifted up and snipped, a director being introduced, the membrane was divided upon it. The incision was not at first extended beyond the umbilicus; but the abdominal walls were so very thick with adipose tissue that the original incision was extended some distance above the umbilicus. The contents of the peritoneal cavity were easily removed, and abundance of room was obtained for the subsequent steps of the operation.

In the first case of gluteal aneurism the patient was emaciated, and the walls could be drawn aside without extending the incision higher than the umbilicus. The intestine was removed outside of the abdomen sufficiently to allow the exposure of the vessel, the bowels being protected by the application of towels and flat zymoca sponges soaked in a warm, weak solution of bichloride of mercury. The index finger felt the pulsation of the common iliac, then its bifurcation, and the external and internal iliac. The ureter was drawn aside, the peritoneum and sheath opened sufficiently to admit the point of the aneurism needle, which was passed from within outward. A double twisted catgut ligature was employed, and the ends cut off, after which a thin layer of iodoform was dusted over the knot of the ligature. The intestine was carefully replaced, the peritoneum and the other structures were stitched. A small drainage tube was introduced between the lips of the wound, iodoform was sprinkled over the linear incision, and antiseptic dressings were then applied. In closing the abdominal wound deep and superficial sutures of catgut, and three interrupted sutures of silver wire were employed.

No nausea or vomiting followed the operation. At six o'clock patient had recovered from the shock and appeared to be in a most comfortable condition.

9th. Patient had a good night and slept after a hypodermatic injection of morphia was given. During the day patient complained of some pain, and there was some tympanites. The ice coil was placed over the abdomen, and her pain was diminished. The urine was passed without the use of the catheter; it contained fifteen per cent. in bulk of albumen. The tongue was dry.

10th. Patient had another good night. Tongue cleared up and moist. The amount of urine passed during the day was nearly two pints, and it contained only a trace of albumen.

11th. The pulse and temperature to-day are below one hundred. Patient has been fed on peptonized milk, which was administered in the form of an enema during the first twenty-four hours subsequent to the operation. The urine contained no albumen and the quantity was normal.

12th. Dressings removed. Wound appeared healthy, with only a slight discharge upon the deep dressings.

13th. Patient had a normal movement from the bowels.

15th. Patient's condition is in every way satisfactory. The wound healed by primary intention,

except near the centre for a little distance, where the incision healed by granulation. The bowels moved after the 13th instant at regular intervals, and with the exception of cramps occurring after the movement, there is nothing of importance to note.

Remarks.—This patient rallied quickly after the operation, and on the fifth day following the laparotomy the bowels moved, and continued after this time to assume their normal function. The albumen, which was not present in the urine previous to the operation, amounted to fifteen per cent. in bulk within twenty-four hours, but all traces of it quickly disappeared from the urine. This acute albuminuria was due to congestion of the kidney, as a result of the ligation of the main trunk of the internal iliac.

With regard to the aneurism, no pulsation ever occurred after the ligature was applied. The aneurismal varix was also completely cured. The ulcer healed, and the parts returned to nearly their normal size and shape. The patient is now discharged from the hospital cured, and expresses herself as feeling perfectly well.

After recording in detail the history of these interesting cases, a final summary seems appropriate in regard to the advantages of this method of treatment over the older methods, restricting, of course, this method of operating to the cases of spontaneous gluteal aneurism.

First. Laparotomy in no way increases the dangers of the operation of ligation of the internal iliac artery.

Second. Laparotomy prevents a series of accidents which have occurred during the performance of the operation of ligation of the artery by the older methods. Among these accidents may be mentioned the division of the circumflex and epigastric arteries, wounding the vas deferens, including the ureter in the ligature, puncture of the iliac or circumflex veins, tying the genital branch of the genitocrural nerve, stripping up and tearing the peritoneum, injury to the subperitoneal connective tissue, and other accidents of a like nature.

Third. Laparotomy enables the surgeon to apply the ligature at a point of election, and affords him an opportunity of obtaining information as to the exact extent of disease in the main arterial trunk.

Fourth. Laparotomy averts the dangers which were likely to follow ligation of the internal iliac artery by the older operations, among which may be cited peritonitis resulting from tearing up the peritoneum posteriorly, cellulitis, purulent œdema, pelvic abscess, septicæmia, and pyæmia.

Fifth. Laparotomy occupies much less time for its performance in order to expose the internal iliac artery than was occupied to reach the vessel by the incision of Abernethy or Sir Astley Cooper.

Finally, it may be said that the only real obstacle to the successful issue of the operation of ligation of the internal iliac artery for the cure of spontaneous aneurism of the gluteal artery lies in the prevention of acute albuminuria. To this point in the clinical history of the operation the attention of surgeons should be directed. The solution of the difficult problem is only to be obtained by experimental observations made upon the lower animals, and when measures are discovered that will obviate and remedy this unfavorable complication, the treatment of spontaneous gluteal aneurism by laparotomy and ligation of the internal iliac artery may be considered under the control of the surgeon.

THE RELATIVE VALUE OF CULTURES IN LIQUID AND SOLID MEDIA IN THE DIAGNOSIS OF BACTERIA.

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THE marked progress recently made in the study of microörganisms as the cause of certain diseases is, without doubt, due to the more thorough application of various solid culture media by Koch and his pupils. To-day the microscope does not hold the chief place in the study of these minute organisms. It is their mode of growth upon gelatine, blood serum, agar-agar, potato, in meat infusions, milk, etc., or the absence of growth in one or more of these substances and in these fluids which aids in confirming the microscopic examination. For this frequently yields results so indefinite that, without the media mentioned, it is impossible to come to any satisfactory conclusions as to the kind of bacteria under consideration. Besides these various tests, inoculation experiments upon animals are of essential importance in the investigation of pathogenic forms.

In connection with the cultivation of bacteria for diagnostic purposes, it is again desirable to call attention to liquid media and their uses. The statements of Koch and others, several years ago, concerning the unreliability of liquids, have almost driven them from the field in Germany, and in our own country.

Pasteur, the founder of this new and brilliant branch of pathology, made cultures in meat broths or decoctions exclusively. That grave errors may arise in this way through contaminations which cannot be easily detected, is self-evident. When gelatine and other solid media were introduced by Koch, he discarded cultures in liquids, except for very special purposes. Since that time they have been looked upon with distrust, and results obtained with their aid suspected and questioned.

If there were some means of keeping liquids free from contamination, it is not unfair to say that they would be better adapted as a natural medium of bacterial life than any solid media ever suggested. This is self-evident for germs endowed with motility. One of the advantages of solid media consists in the fact that any after-contaminations are quite easily detected with the unaided eye. This is not so readily done in the case of liquids. There are two ways of overcoming this difficulty: 1. By the use of a culture-tube in which the parts are so adjusted that a momentary exposure for purposes of inoculation, etc., is practically without any danger whatever. 2. By frequently testing liquid cultures on solid media, preferably on nutrient gelatine. My experience with the culture-tube devised by Dr. D. E. Salmon has been entirely satisfactory. Its efficiency may be considered quite perfect. As it has been

fully described,[1] I need not dwell upon it here. The testing of liquid cultures is very simple, and quickly accomplished. Either a minute portion is shaken up with liquefied gelatine, and the mixture poured on glass plates, or a platinum wire, previously dipped into the culture liquid, is drawn several times across a layer of gelatine not yet congealed. In either case, the developing colonies will determine the purity or impurity of the liquid culture. I have almost invariably found the thirteenth or fourteenth generation as pure as the first, when tested in this way. I should be surprised to find one out of every hundred tubes impure.

I will grant unreservedly that test-tubes plugged with cotton-wool are not fit for liquid cultures. For gelatine in such tubes, when frequently exposed, is invariably invaded after a time by fungi or bacteria. The plug being a nidus for dust, its removal is always attended with danger. Because a culture-tube which eliminates the use of a large, removable plug is more costly, it does not follow that it is not valuable in scientific research. We know that in the departments of physics, chemistry, and physiology, the most advanced work is of necessity performed with the most complex apparatus. That there are those who do not succeed in keeping liquid cultures pure, does not concern those who do. It behooves the former, in the interest of a true scientific spirit, to improve their apparatus and technique, instead of condemning the method.

Conceding then, for the present, that cultivations in liquids can be kept free from contamination, the point at issue is the employment of liquids for diagnostic purposes. Whoever has paid any attention to the multiplication of bacteria in nutritive fluids has, no doubt, been surprised at the variety of features which present themselves, and at the regularity with which the same ones appear in cultures of the same microbe. To illustrate how many different characters may be used in determining the kind of bacteria, and the purity of the cultivation, I will briefly outline a few of the most important ones, as they have come under my own observation, referring the reader to Miquel[2] for the characters of bacteria obtained from the air, soil, and water.

Every cultivation made in a tube shaped like a test-tube presents three regions for observation—the liquid itself, its surface, and the bottom of the tube. In other words, there may be a membrane covering the liquid, and a deposit in the bottom. With reference to the liquid itself, it may remain clear or become clouded. In the former case, the growth may appear as a membrane, or a deposit, or it may be disseminated through the fluid in minute granules, flakes, or cloud-like masses. The cloudiness may be very faint—a mere opalescence—or it may be very dense, approaching a turbidity. When shaken the cloudiness may be, as it were, set in motion, and thus show itself composed of elements indistinguishably minute, or as granular and flocculent masses; or it may be impossible, by shaking, to disturb the uniform opalescence. The liquid may become colored. There may, or may not, be a membrane on the surface of the liquid. When present, it may vary from a mere iridescent pellicle to a thick, creamy layer. Its formation and growth should be carefully noted, together with its color, consistency, and structure, when fully formed. The deposit may be absent, very scanty, or quite abundant and colored. When agitated, it will rise from the bottom in coarse or fine flakes, as a viscid, ropy mass, or as a fine powder. In connection with these characters, it is necessary to take into consideration the composition of the culture liquid, and its reaction. The temperature to which the culture is exposed has a marked effect on the rapidity with which these characters appear. The odor and reaction of the culture of a certain age are also instructive in many cases.

When these various features, and many others not given above, are taken alone and in combination, we have, for most cultures, an almost positive means of diagnosis, as well as a ready method of detecting contaminations, for these features are, as a rule, constant. In order to illustrate this statement, I will write down a few features of the growth of *bacillus subtilis*[1] in a neutralized infusion of beef, to which one per cent. of peptone has been added.

In a temperature of about 35° C., the liquid becomes opalescent in from six to eight hours. When agitated, rolling, cloud-like masses are outlined by a condensation of the suspended bacteria. Within twenty-four hours an interlacing network, or islands of a whitish, gelatinous deposit, appear on the surface, which, within another day, are fused into a white, papery membrane, covering the entire surface. This membrane, which is not smooth, but puckered and pouched in a peculiar way, soon pushes its border up the sides of the tube, resembling, at this stage, the cup of an acorn. The liquid itself gradually clears up in the meantime, until it is quite as limpid as before inoculation. This clearing up of the liquid, together with the puckered, cup-shaped, papery membrane, is very characteristic of this bacillus, certainly as reassuring to the observer as the stellate growth of its colonies on gelatine. For, if another microbe be present, the liquid remains clouded, and the membrane is modified. There are many other points of interest in connection with the membrane, and the deposit forming later, which I forbear to mention here, as their value for diagnostic purposes is limited by their tardy appearance.

If we now turn our attention to solid media, we shall find that diagnosis often fails when the bacteria do not liquefy the substratum. The colonies then are apt to develop very much alike, and any modifications may as well be credited to change in the consistency of the gelatine, due to variations in temperature, to drying, etc. These same changes will modify the appearances of colonies of the same microbe. Tube cultures in gelatine of radically

[1] First Annual Report of the Bureau of Animal Industry, Department of Agriculture, 1884, p. 229. American Monthly Microscopic Journal, 1884, p. 185.

[2] Annuaire de l'Observatoire de Montsouris pour l'an 1885, pp. 577 et seq.

[1] This bacillus can be obtained pure at any time, by boiling in a water-bath, for from one-half to three-quarters of an hour, a filtered infusion of hay, contained in a flask plugged with cotton-wool.

different bacteria are frequently almost identical in appearance, or the slight differences are found not constant. In such cases, cultures in fluids are frequently of great service. In a paper[1] recently read before the American Association for the Advancement of Science, I called attention to two pathogenic forms, identical microscopically, and in their effect upon animals, though found in widely separated sections of our country. One of the few differential characters was the presence of a membrane in the liquid culture of one germ, its absence in the other.

The great importance of solid media in isolating bacteria, and testing the purity of cultivations, is conceded by all engaged in this field of research. The advantage of starting cultures from a single germ, by inoculating them from the colony, its progeny, is inestimable in obtaining accurate and reliable results. But that liquids have also a place, and a very important one, the facts above stated will, I hope, demonstrate beyond a doubt. It seems a pity, therefore, that we should be blindly following in the wake of some general statements which tend to deprive the study of microörganisms of an exceedingly valuable accessory.

That they have as yet but little recognition in the country where microörganisms are receiving most attention to-day, is illustrated by the recent issue of a book,[2] in which are given all the well-known culture reactions, excepting those in liquids, of the best known bacteria. I venture to maintain that the characters of the liquid cultures of some of the bacteria there tabulated are worth as much from a diagnostic standpoint as all the rest combined. It is, in fact, a matter of common observation, that, for many bacteria, cultures on agar-agar and blood serum offer scarcely anything different from what is observed on gelatine. In the first two editions of Hüppe's *Bakterienforschung*, very little is said of liquid media. In the third edition there is a decided improvement. Several pages are added, giving recipes for the preparation of nutritive meat infusions. The author also quotes from Miquel a number of characters which liquid cultures may present, and which may serve as a means of differential diagnosis. It is to be hoped that a fourth edition of this very excellent and impartial handbook will give a still ampler space to this subject.

I am happy to quote from an author so well versed in bacteriological technique as Miquel,[3] in support of the statements made in these pages. In fact, they would appear as a mere echoing of his own, if the conclusions there recorded had not been reached before the publication of his remarks, and in part written before my attention was called to them. He says: "I have been one of the first to recognize that solid substrata offer a ready means for the separation of species. But I consider it puerile to apply a particular method to all kinds of experimentation." After giving some of the diagnostic characters of liquid cultures referred to above, he concludes by saying: "I fear that I shall abuse the patience of the reader in continuing still farther the enumeration of the advantages which it (bouillon) offers over gelatine for the microscopic diagnosis of species. . . . . It is said that species are easily recognized in cultures on gelatine with the unaided eye, and that cultures in liquids do not possess this advantage. Such a statement denotes profound ignorance. To my knowledge there are not two bacteria that develop alike in beef broth, for example."

That every one studying microörganisms should familiarize himself thoroughly with the manipulation of cultivations in liquids, and the characters which they present, so that impurities may be detected, becomes self-evident when we reflect that most of the biological properties of bacteria can be observed only in liquids. "With cultures in liquids it is possible to study the biological phenomena of fermentation, to analyze gases set free, to collect the soluble ferments diffused through the fluid, to determine the formation or disappearance of certain substances. I doubt very strongly whether such things could ever be done with liquid cultures.[1]" To these may be added the study of ptomaines, of such great interest to the pathologist. Inoculation experiments are also much simplified, and the dose is very easily regulated.

Considering these important facts, the views of the unbiassed investigator should be directed to the employment of whatever is truly serviceable, whether it be of French, German, or American origin. The future will decide still more clearly the relative merits of solid and liquid culture media, and range them side by side, for both have become indispensable.

[1] THE MEDICAL NEWS, September 18, 1886, p. 338.
[2] Eisenberg, Bakteriologische Diagnostik, 1886.
[3] loc. cit.

THE NASAL REFLEX.
A NEW METHOD FOR DETERMINING THE LOCAL SENSORY ACTION OF DRUGS.
A PRELIMINARY NOTE.

BY THOS. J. MAYS, M.D.,
OF PHILADELPHIA.

IT is not, as it is generally believed to be, comparatively easy to distinguish between the local sensory and motor action of drugs; and it becomes especially difficult when, in other respects, the action of two drugs is quite analogous. The methods hitherto in use of applying a solution of the drug to the skin of a frog, and then testing the reflex irritability of the same; or of immersing one leg in the solution and then comparing its reflex sensibility with the other by means of mechanical, thermal, or electric stimulation, do not always yield satisfactory results. Hence, in the hope of adding something that may facilitate research in this new field of medicine, I submit the description of a method which is both simple and reliable.

Five or six drops of a one or two per cent. solution of the drug to be tested are slowly dropped, either from a dropper, or from a hypodermatic syringe into one nostril of a good-sized frog at intervals of from three to five minutes, and the nasal reflex

[1] Loc. cit.

is tested by introducing the end of a very light wire (such as is used to keep a hypodermatic needle pervious) into the nostril under the influence of the drug, as well as into its fellow on the opposite side and the effects compared. The nasal reflex is extremely sensitive, and shows the slightest interference with its integrity. As soon as the wire comes in contact with the inner surface of the nostril in its normal state the frog will wink and wince, and make efforts to brush the offending body away with the front foot; while after the instillation of ten or fifteen drops of a drug solution which has the power of obtunding sensibility, the frog will not only allow the wire to remain in the nostril, but will endure considerable boring with it before he evinces the slightest pain. After the nostril is fully under the influence of the drug, reflex sensibility is annihilated on that side, while the sensation of the opposite nostril remains intact.

This method, which I have called the nasal reflex method, has been used by me in determining the difference between the local action of theine and of caffeine, and this, I think, is a sufficient guarantee of its delicacy and accuracy.

MEDICAL PROGRESS.

SHOEMAKER'S ULCER.—DR. DANFORD THOMAS has called attention to this peculiar form of industrial disease. While holding an inquest recently on the body of a shoemaker who had died suddenly at Queen's Road Station, Bayswater, from the bursting of an ulcer in the stomach, Dr. Thomas said it was a pity that shoemakers persisted in pressing the boot to the stomach when engaged on their work, for the pressure was apt to produce an ulcer. We are informed by Dr. Lomas, an excellent authority on the subject, that a very large number of shoemakers suffer from stomach diseases. Some years ago an upright bench for shoemakers was exhibited by the Society of Arts, which, it is believed, is now used in many boot factories. The repairers of boots and shoes are the people who still carry on their work in the old way. In hospitals and dispensaries, he has met with some cases of hæmatemesis from pressure over the stomach. As a class, shoemakers are not healthy; many of them become very feeble at the age of forty or fifty.—*British Medical Journal*, October 30, 1886.

ON URÆMIC HEMIPLEGIA AND HEMORRHAGIC OTITIS IN THE COURSE OF BRIGHT'S DISEASE.—DEWÈVRE, in the *Lyon Médical*, No. 40, Oct. 3, 1886, records the following case: A tall muscular soldier, aged twenty-one years, was struck with complete left hemiplegia and aphasia. There was no history of any hereditary taint or excesses. Two years previously he had suffered from scarlatina, with nephritis and anasarca. At the end of fifteen days the urine was normal, but he felt constant dyspeptic troubles, cramp of the limbs and back of the neck, and palpitation on exertion. The left arm was less affected than the leg, and the face only slightly paralyzed. Taste and sight were not affected, but the pupils were greatly dilated. There was intense frontal headache, nausea and dryness of the tongue, with constipation and suppression of urine. The heart and circulation were normal, but the respiration was anxious and of Cheyne-Stokes character, and crepitant râles accompanied a difficult expectoration streaked with blood. Frequent epistaxis took place, and a week after the attack there was some bleeding from the left ear, and the patient complained of tinnitus and of distressing pulsation on the left side of the head. There was complete deafness of the left ear, and the membrana tympani very red. The mastoid was red and œdematous, but not painful to the touch. The sero-sanguineous discharge from the ear became purulent. Two months later a perforation was observed, but the hearing returned and all pain ceased. The urine contained a little albumen.

Various authors have called attention to the occurrence of hemorrhage in the middle ear during Bright's disease and diabetes, and Dr. Dewèvre points out that the symptoms are in exactly the reverse order to purulent affections producing secondary cerebral complications.

CONTRACTURE DIATHESIS, PARTICULARLY THE CONTRACTURE PRODUCED IN HYSTERICS BY THE APPLICATION OF A LIGATURE.—Charcot has given the name of *Diathèse de contracture* to a special nervous state which is neither contracture nor paralysis, but which at the same time contains a little of both. The author of this paper, M. Berbez, says they were led in the following manner to note the frequency of the contracture diathesis in hysterics at least. M. Charcot gave a lecture on intermittent limpness (*claudication*), caused by obstruction, more or less complete, of the arteries of a limb, and ascribed to local ischæmia, the rigidities, the contractures more or less prolonged, which supervened in the ischæmic muscles. Wishing to verify this hypothesis, M. Charcot applied on many of the *externes* Esmarch's band without obtaining contractures. In this state of ischæmia the muscles were exhausted by the patient being made to squeeze the dynamometer, but even then contracture did not supervene. Very different, however, were the results obtained by experimenting on hysterics. All, or nearly all, of them developed contracture with the first turn of the band. This led Charcot to think that ischæmia was not the cause of the contracture. They applied the band from the tip of the fingers to the wrist, then at the elbow, then the band was carried as high as the insertion of the deltoid. In all these cases the contracture was produced, and rose with the height to which the band was carried. Then the band was applied to the middle part of the forearm or limb, and contracture followed in the same way. The contracture which the circular band produced disappeared nearly always after its removal. In two cases it became more generalized—once over the whole body, in another to the right side. In some minutes the contracture invaded the four limbs in a young woman, who came as an out-patient, and to whom the band of contracture was applied in the middle part of the right forearm. General massage used at once made the rigidities disappear completely. This forms an easy and prompt method of discovering the contracture diathesis and hysteria in cases of difficult diagnosis.—*Edinburgh Medical Journal*, November, 1886.

ANTISEPTIC OBSTETRICS IN VIENNA.—From an elaborate paper by EHRENDORFER (*Archiv f. Gyn.*, XXVII.

2), we reproduce here simply the results from Spaeth's Clinic, where the antiseptic means depended on are carbolic acid and iodoform. The figures from this clinic are analyzed with great care, the history of each septic or otherwise fatal case being given in abstract. We reproduce the figures for each year separately:

In 1882 there were 2898 confinements. Total corrected mortality for clinic, 0.51 per cent.

Since the puerperal mortality in any clinic will, in a measure, go hand in hand with the abnormalities and complications occurring, we note a few of these:

116 miscarriages; 35 twin labors; 16 face presentations; 59 forceps operations; 23 versions; 3 embryotomies; 2 decapitations; 1 Cæsarean section; 12 craniotomies; 7 placentæ prævíæ.

And further we note that, during this year, 211 students had the privileges of the wards, and were instructed in the touch and in delivery.

In 1883, there were 2669 confinements. Mortality, 0.33 per cent. Of complications and interference we note: 54 forceps; 90 extractions pelvic extremity; 24 versions; 21 manual removal of placenta or secundines; 8 craniotomies; 90 miscarriages.

During this year there were 381 students in attendance.

In 1884, there were 2788 confinements. Mortality (corrected), 0.32 per cent. (including two Porro cases and one Cæsarean section—uterine suture).

The complications, etc., were similarly large, and the students in attendance numbered 324.

The figures for puerperal morbidity during these three years were: 1882, 4.31 per cent.; 1883, 3.59 per cent.; 1884, 3.08 per cent. In particular, were the results for 1883 better than those for 1882, seeing that in the former year there were 390 operations against 340 in the latter, and the number of students in attendance was also greater.

(The above results, be it remembered, were obtained in a clinic in an old hospital, and where the material was largely used for purposes of instruction.)

Ehrendorfer then describes Spaeth's clinic, and formulates the antiseptic rules which are rigidly adhered to. (It seems profitable to reproduce briefly these rules here, since, in all probability, the good results obtained may fairly be said to depend on the antisepsis resorted to. And whilst we do so, we do not mean to imply that just as good results may not be obtained in private practice without such rules. Indeed, we believe them unnecessary in private practice, where all that is requisite is through cleanliness, which may be obtained without antiseptics. There is a vast difference, however, between private and hospital practice.)

The rules in brief are: Before any vaginal examination, hands must be cleansed with soap and brush, and then dipped in from one to five per cent. carbolic. Examining finger smeared with three per cent. carbolized vaseline. Neither before nor after an examination is vaginal douche given, unless there be special ground therefor, fever and bad discharge, etc. After a normal, spontaneous labor, the external genitals are washed with one to two per cent. carbolic. After intrauterine manipulation, the uterus is washed out with one or two litres warm, one to two per cent. carbolic. After dead-born fœtus (decomposed), or difficult instrumentation, an iodoform pencil is, in addition, used. Episiotomy wounds, if not deep enough for suture, are simply dusted with iodoform, and similarly slight perineal ruptures. During the puerperium, unless especially ordered, neither vaginal injections nor antiseptic compresses. As soon as the lying-in woman has elevation of temperature, she is isolated. Each ward is carefully disinfected when empty. In case of rise of temperature, if there are wounds of the outer genitals, vaginal injections, one to two per cent. carbolic; if the lochia are bad-smelling, intrauterine douche twice daily, or else iodoform pencils. The douche is stopped as soon as the lochia become normal. Continuous irrigation never used. Iodoform freely on all wounded surfaces.

At Spaeth's clinic, in brief, the puerperal uterus is not considered in similar condition to an amputation wound. The aim is to prevent infection from without, and this is attained by cleanliness, weak carbolic solutions, iodoform, and *leaving the patient alone* unless operative measures have been resorted to, or symptoms arise calling for the vaginal or intrauterine douche.

A valuable summary of the literature of puerperal fever, and clinical reports bearing on this disease, are appended.—*American Journal of Obstetrics*, Nov. 1886.

A CASE OF TUBERCULAR INOCULATION IN AN INFANT.—Syphilis has frequently been conveyed by the process of sucking the wound in ritual circumcision, but the communication of tuberculosis in the same manner has been met with more rarely, and is less known. There are on record two cases observed by Lindmann and twelve by Lehrmann, but without examination for bacilli. Elsenberg, a Polish doctor, relates the following: A priest suffering from tubercle of the lungs and of the larynx, with bacilli in his sputum, had circumcised an infant. When seen, at the age of five months, the wound in the penis had become transformed into an ulcer, covered with a yellow and adherent deposit. There was a hard nodule in the prepuce near the foreskin. On both sides the inguinal glands were much swollen, and from an opening in the left side there escaped an opaque serous fluid, containing caseous particles. In the mastoid region in the right side was a large fluctuating abscess. The other lymphatic glands were unaltered. The child died of erysipelas and tetanus, after the removal of the caseating glands and the opening of the mastoid abscess. Numerous tubercle bacilli were found in the ulcerated prepuce and caseous lymphatic glands.—*Edinburgh Medical Journal*, November, 1886.

THE DURATION OF INFECTIVENESS IN SCARLET FEVER.—In the Section of Public Medicine at the annual meeting of the British Medical Association in Brighton, Dr. H. Ashby spoke as follows:

In reviewing the character of the cases discharged which have apparently infected others, one finds a certain number in which it is very difficult to explain the cause of their retaining their infectiveness beyond the usual time. Some cases have occurred in which especial pains have been taken to free them from infection, and who have been retained till the end of the seventh week, and in one or two cases beyond this period, on account of their belonging to a family in which there were many children, and yet a reinfection of the household followed in a few days after their return home. These exceptional cases it is difficult to explain, unless one takes refuge in the belief that the infection must, in some way or other, have been conveyed from the fever

ward to the household by means of the person or clothes, rather than by any infection given out by the patient himself. Our experience plainly shows that cases of fever attended by such complications as nephritis, empyema, otitis with discharge of pus from the ears, and suppurating glands, retain their infectiveness for a longer period than do uncomplicated cases of slight or medium severity. On one occasion, a case of empyema following scarlet fever was transferred from the fever to the general wards on the forty-ninth day; and on opening the chest antiseptically, and evacuating the pus, was followed, within forty-eight hours, by the nurse who attended it having an attack of scarlet fever, and two other cases in the ward. As an interval of several days elapsed after removal and before operating, it seemed most probable that the pus contained infecting materials. In some of our cases which have inadvertently been sent out with discharges from the ears or glands, it has appeared to me to have been the means of infecting others. I believe, also, that cases of scarlatinal nephritis retain their infectiveness for a lengthened period, the infection being, doubtless, given out in the urine. I have seen such cases which were quite free from desquamation, and having suffered from a mild attack of scarlet fever many weeks before admitted to a general ward, their admission being followed by an outbreak of scarlet fever. In such cases, however, it must be remembered that their urine is carefully saved, standing about in the ward for many hours, and is, consequently, more likely to infect than if thrown away at once, as urine would be in cases where no albuminuria exists. Concerning the desquamation, I may add that, while I believe in the importance of baths and ointments in order to remove the epidermis which has detached, yet I believe in the importance of removing every little tag of skin, or of rendering smooth a more or less roughened skin as having been much exaggerated. Probably the poison is stored up in the epidermis, and the exfoliating skin is capable of communicating the poison to others, but it can hardly be held that the skin monopolizes the whole of the poison to the exclusion of the internal organs, and, moreover, baths and external applications must assist in rendering the epidermis innocuous, while the internal organs more slowly give out the poison by means of the secretions and breath.

In conclusion, I venture to summarize my paper as follows: 1. If desquamation is complete, convalescent scarlet fever patients may be discharged at the end of the sixth week, though, in order to secure absolute immunity from infection, it is wiser to delay till the end of the eighth. 2. Cases complicated with nephritis, empyema, otitis, or glandular abscesses should be detained until the cure is complete. 3. That while it is important that desquamation should be as complete as possible, the detention of patients beyond the eighth week, in order that the epidermis should be removed upon the soles of the feet, etc., is unnecessary.—*Brit. Med. Journal*, Oct. 30, 1886.

FATAL RESULT OF PEROXIDE OF HYDROGEN INJECTIONS.—A Norwegian surgeon, Dr. Laache, has reported a case in which a fatal result followed an injection of peroxide of hydrogen into the pleural cavity. The patient was a man twenty-eight years of age, who had had a portion of the ninth and tenth ribs resected for empyema. The operation had been successful and the wound progressed favorably, and two months after the operation there remained only a fistula about an inch and a half long. In order to hasten the healing of this, hypodermatic injections of a three per cent. solution of peroxide of hydrogen were resorted to, as this method of treatment had given very satisfactory results in two somewhat similar cases in which it had been tried. Six injections, each containing 0.8 cubic centimetre of the solution, were administered without any particular effect. At the seventh, however, the patient complained of pain and faintness, the pulse failed, the respiration became oppressed, clonic contractions occurred in the right arm, the head turned to the left, the jaws became tightly set, the face became cyanotic, and the patient died in ten minutes. The necropsy, which was not made till forty-eight hours after death, revealed nothing very striking. The heart was dilated, and contained liquid blood without air bubbles; some ecchymoses were found in the parts of the left lung which were adherent to the chest walls. In the fourth ventricle of the brain an ecchymosis the size of a pin's-head was seen. A number of air-bubbles were present in the blood of the hepatic veins, and some were seen on cutting into the spleen and kidneys. The cause of death was, therefore, by no means clear. Dr. Laache suggests that it may have been the small extravasation in the fourth ventricle or shock. Dr. Wulfsberg, who took part in the discussion on the case at the Christiania Medical Society, thought it was probably due to the introduction of the drug into the circulation. He stated that the strength of the blood-current might have carried the peroxide, if introduced into a vein, through the right heart and lungs almost unchanged, but that afterward more oxygen might have been disengaged than the blood could absorb, and bubbles were thus produced, which may have been the immediate cause of death. Where animals have been subjected to injections of air into the veins bubbles are not always found in the blood. In these cases Dr. Wulfsberg thinks that death has been due to paralysis of the heart, for when examinations have been made immediately after death bubbles have been found in the coronary arteries. As so long a time had elapsed before the necropsy in Dr. Laache's case, these might have been absorbed.—*Lancet*, October 9, 1886.

MEASUREMENTS OF BODY SURFACES.—According to some measurements made by P. PUTILOV, of Omsk, the surface of a man's head is 27 times as large as that of an average child at birth, while the trunk and the upper and lower limbs have respectively 7.5, 7, and 10.8 times the superficial area in the adult that they have in the infant. The mucous membrane of the respiratory apparatus appears to increase much more than that of the œsophagus, the former measuring 13.5 times as much in the adult as in the infant, while the latter only measures 4.7 times as much. The stomach is 50 times, and the small and large intestine 18 and 22 times, as large. The internal surface of the digestive canal is given as 1200 sq. cm. in the baby, and 18.300 sq. cm. in the adult, and the surface of the liver is 199 and 774.5 sq. cm. in the two bodies respectively, that of the adult being 3.9 times that of the baby.

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CASTRATION OF WOMEN IN NERVOUS AND MENTAL DISEASES.

A LITTLE more than ten years ago, Battey in the United States and Hegar in Germany almost simultaneously removed the ovaries in order to determine the menopause, with the hope of curing serious disease that had baffled other treatment. Although this operation is so recent, it has been performed hundreds of times, and its literature has become vast. Removal of the ovaries, or of the tubes, is a frequent subject of discussion in medical societies and journals, both at home and abroad, and indeed, some of the obstetrical societies are becoming chiefly remarkable for the comparative absence of consideration of obstetric subjects, while the monthly *ménu* is almost sure to include ovaries or tubes, or both, until one becomes somewhat weary of these articles, or is ready to suggest that there might be tubo-ovarian societies organized.

In the midst of many experiences and differences of opinion as to the castration of women, it was a wise and happy thought to combine, as has been recently done in the *American Journal of the Medical Sciences*, the views of three great masters in regard to the suitableness of the operation in mental and nervous disorders. In this symposium SIR SPENCER WELLS speaks first, then HEGAR, and, finally, BATTEY. For obvious reasons, we will in this brief notice begin with the statements of the last. We might truthfully add that he alone of the three "sticks to the text," Sir Spencer Wells's observations being, especially in some parts, quite discursive. Further, Battey alone presents facts, while the others deal in arguments and opinions. Yet, notwithstanding these undoubted merits of his contribution, it is somewhat disappointing. He has forsaken the position taken in his first communications upon the subject; he no longer holds to "normal ovariotomy," but claims that the ovaries which he removes are diseased, though, on the other hand, both Wells and Hegar regard castration as including removal of the normal ovaries.

Battey mentions the evidences of disease found in the ovaries which he had removed, but he gives only the gross appearances, and there is presented no study of the more minute pathological changes which establish the nature of the affection. Indeed, when we read in connection with his statement that of Emmet which is included in his paper, there is obviously needed a more complete demonstration of the alleged fact. Emmet's statement, referring to hundreds of post-mortem examinations which he had made, is that "Cystic degeneration was very common, and often the ovaries were found bound down by old pelvic adhesions, when, during life, not the slightest symptom had been given of any unusual local disease."

Battey gives the results in 36 cases upon which he has operated for epilepsy, mania, and ovaralgia: of which 23 were cured, 7 improved, and 6 not improved. He claims that patients who are not benefited the first year after the operation may, at the expiration of two or three years, prove soundly cured. This, we think, a very weak point, especially when such a claim is made in behalf of cases of ovaralgia. If one suffers from toothache, and the pain is not removed, but continues unabated after the dentist extracts a tooth, our conclusion is that he pulled the wrong tooth; and if we must wait two years for the pain to cease, we must naturally conclude that the cessation was spontaneous. Again, unless ovaralgia be different from neuralgic affections of other organs, it has no pathological anatomy yet demonstrated, and, therefore, if the ovaries removed in these cases presented obvious evidence of disease, may there not be some doubt as to the diagnosis of ovaralgia? Then, too, after the removal of the aching organ, is it right to call the pain still felt ovaralgia?

When we read the statistics given by the ardent friends of removal of the ovaries for mental or nervous diseases, the testimony being so generally favorable, we feel somewhat like the man who, after seeing virtues universally recorded upon tombstones, wondered where the bad men and women were buried; so we wonder who does the unsuccessful operations. Certainly there are very many of them; more, probably, than Dr. Battey is aware of; these unhappy women, in their disappointment and despair, do not return when they find their ovaries have been removed without the slightest benefit, to those who have removed them, but seek other counsellors, while the operators may honestly believe, because the

patients do not again consult them, a year or two afterward, that the cures have been complete. The danger of error from this source is real and great.

Battey gives as one of the forms of disease presented by the ovaries "a sort of sclerosis of the investing tunic," and "the stroma also presents a sort of fibrous degeneration." If we compare these statements of the gross appearances of the diseased ovaries with those given by Sappey of their normal structure, the necessity for microscopic study of the former is evident.

Hegar holds that "castration is indicated in a psychosis evoked or maintained by pathological alteration of the sexual organs, and in a neurosis originating from the same source, as soon as this imperils life or hinders all occupation and all enjoyment of life." He regards castration, too, as indicated when a psychosis is maintained by the anæmia resulting from hemorrhage in consequence of a uterine myoma. Now in regard to the results arising from the operation in cases of bleeding myomata, unfortunately he gives no statistics, and we may supplement the deficiency by those of Winckel in his recent admirable work upon diseases of women. Fifteen per cent. of women who have had their ovaries extirpated for bleeding myomata died; twenty per cent. of those who survived were not benefited; and, hence, the operation cured sixty-five per cent. This is by no means a favorable showing, even including those cases in which mental disorders resulting from the anæmia were cured.

In reading Hegar's article one is struck with the admitted difficulties in determining the cases in which castration is indicated; a most commendable frankness characterizes the author's utterances, and while he regards the operation with great favor, having had from it, in suitable cases, most brilliant results, he cautions against resort to it without clear indications. He concludes his able contribution by a consideration of "the causes of the mishaps which unfortunately are not rare, and which have brought the operation, otherwise so beneficial, into discredit."

The most brilliant of the series is Sir Spencer Wells's contribution, but we have only space to refer to his conclusions. The first is that the "removal of normal ovaries may be advised in some cases of uterine fibroids, aud in uncontrollable uterine hemorrhage." But is this operation a remedy for other hemorrhages than those caused by fibroids? The cases must be very rare that justify it.

Another indication is "certain malformations of the genital organs, deformities of the pelvis, and accidental obstructions of the vagina." The right to use the operation "is very limited in cases of ovarian dysmenorrhœa or neuralgia, and only when they have resisted all treatment, and life or reason is endangered."

He regards it as "inadmissible in nearly all cases of nervous excitement and madness;" he states that "it should never be done without the consent of a sane patient, to whom its consequences have been explained." He also says that "the excision of the morbid ovaries and appendages should be distinguished from oöphorectomy, and ought not to be done without the authority of consultation, as in most other cases of abdominal section," and that "in nymphomania and mental diseases it is, to say the least, unjustifiable."

It is probable that these conclusions, so conservative in character, will meet with the approval of the majority of gynecologists. There is a growing conviction in the professional mind that removal of the uterine appendages has been resorted to in many cases unnecessarily, and that some of the friends of these operations have been erecting too large a superstructure upon a limited foundation. These articles will help to a larger knowledge and a wiser practice.

HOSPITALS FOR THE INFECTED SICK.

A HOSPITAL for the infected sick is never looked upon with favor by the neighborhood, partly on account of the fear of the spread of the diseases treated in it to the inhabitants living in the vicinity, and partly on account of its depreciating effect upon the value of real estate and the impediment which it certainly offers to local improvements.

A proposition has been started in Philadelphia for the removal of its municipal hospital for contagious diseases, but no new location has been suggested. and it is not an easy matter to select a site against which some objection may not be raised. The site of the present hospital could not have been better selected, but the city is rapidly extending toward it with improvements of the best character, and, unless the hospital is removed, the growth of the district will be checked, or the improvements will be of an inferior character.

There is, however, another side to the question, which bears directly upon the purposes and uses of such an institution. A hospital of this character is an important and indispensable means of protecting the public health by the facilities it offers for isolating cases of infectious diseases which are liable to spread in the community with disastrous consequences. Such an institution is for the benefit of the entire community, and should not be distantly located from any part of it, otherwise the lives of the sufferers would be imperilled by the dangers incident to distant transportation. Under the circumstances great difficulty would be experienced in persuading the sick to submit to the increased discomfort and danger, even if it were justifiable, and fear would lead to the concealment of dangerous diseases.

In order to overcome these objections, the most

judicious course to be pursued by a city like Philadelphia, covering an immense area, would be to have a series of small hospitals of limited capacity, so that the spread of infection by the concentration of the sick may not occur, and have them distributed throughout the city so as to make access convenient.

Hospitals might be located in the midst of the community, so constructed and managed as to be perfectly safe from becoming sources of danger; and, moreover, as a means of securing personal coöperation, so necessary to success in restricting or preventing the spread of infectious diseases, the people, rich and poor, ought to be induced to take advantage of the superior facilities for treating the sick, near at hand, which such hospitals would afford, and thus protect their families and the community from unnecessary exposure.

This plan, if judiciously carried out, would tend to remove the motive for concealment, lead to early and efficient treatment, from the want of which the poor frequently suffer, secure better management of cases of infectious disease, check the spread of contagion, lessen the number of cases, and save life.

A VERY curious and interesting modification of the ordinary reaction of the pupil to normal retinal stimulation, and one in which the variations in response are conditioned by voluntarily induced changes in the subjective state of the person under observation, is thus described by HAAB in the *Correspondenzblatt für schweizer Aerzte*, 1886, No. 6.

The observer sits in a darkened room in which there is but one light, derived from a lamp or candle, before which he so places himself as to gaze steadily at a dark part of the room and a little to one side of the flame. If now, *without in anywise changing the direction of his gaze*, the experimenter directs his *mental* attention to the point of light, there is an immediate and vigorous contraction of both pupils, a condition which remains as long as the attention is continuously applied to the indirect vision. On the return of the attention to the point toward which the eyes have been constantly directed there is again dilatation of the pupils. This reaction is evidently conditioned by varying states of the cerebral cortex, and by it Haab seeks to explain some of the anomalies of pupillary action noted in dementia paralytica. His observation also shows that the pupillary reflex may be evoked not merely by stimulation of the macula lutea, but, under appropriate subjective conditions, by the action of light upon any portion of the retinal surface.

BY the death of M. PAUL BERT the profession in Europe loses a brilliant representative, and France mourns a devoted son. His was a restless genius which could not be confined within the narrow lines of one profession, but sought in science, in literature, and in political life, avenues for its exercise. He was essentially a physiologist, devoted to experimental work, and his researches upon the action of gases, and the effects of barometric pressure have a permanent value. Many of his earlier researches in comparative anatomy and physiology are characterized by great ingenuity, as in the experiments on animal grafting which first brought him into notice. As a politician, he achieved remarkable success, and, when Minister of Public Instruction, was instrumental in effecting many important changes in the educational system of France. He was an aggressive and uncompromising reformer, and possessed a boldness and skill which enabled him to carry out successfully measures of the most radical nature.

It is interesting to note that while in this country and in England the profession has not yet produced a politician of the first rank, there have been several on the continent of Europe. Of these Virchow is the veteran, though the conditions of life in imperial Germany have never enabled him to achieve the success which Paul Bert had in republican France. In Italy, Professor Bacelli has been a minister of the crown, and in France Dr. Clemenceau remains as one of the most trusted leaders of the people.

THE Michigan State Board of Health has requested the Regents of the University of Michigan to consider the advisability of establishing a laboratory of hygiene, in which original investigations—chemical, microscopical, and biological—shall be carried on, and attention shall be given to the subjects of the analysis of water, the adulteration of food, and the practical investigation of other questions in sanitary science. The importance to the public of the establishment of such a laboratory cannot be overestimated, and it is to be hoped that the request of the Board will be promptly acted upon by the Regents.

REYHER records, in the *Deutsches Archiv für klinische Med.*, Bd. 39, Hefte 1 und 2, thirteen cases in which pernicious anæmia was coincident with the presence of a bothriocephalus latus in the intestinal tract, and in which the expulsion of the parasite resulted in the cure of the disease. One of these patients manifested the symptoms of the disease three times within the space of five years, which symptoms were, in each instance, at once relieved upon the removal of the tapeworm. In several of the cases the host entertained at one time several of these parasites. The examination of the blood showed the presence of distorted "rouleaux," together with numerical diminution and alteration of form in the red corpuscles.

SOCIETY PROCEEDINGS.

NEW YORK SURGICAL SOCIETY.

Stated Meeting, October 25, 1886.

DR. LANGE presented a case of

ANEURISM OF THE OBTURATOR ARTERY,

giving the following history:

G. B., twenty-one years of age, had acute osteomyelitis of the left os ilei, about six years ago. During the acute stage spontaneous separation of the epiphysis of the femur occurred, and recovery took place after a sequestotomy of the ileum. The limb gradually became so much adducted, that, for its use in walking, a shortening of three or four inches took place, though bony ankylosis existed at the hip-joint. Subtrochanteric cuneiform osteotomy, about a year ago, done at the German Hospital, improved his condition so much that he was able to walk without adding anything to his heel, until lately, when moderate adduction again made itself manifest. At the seat of the hip-joint everything seemed to be one bony ankylotic mass, and still we must assume that within this mass gradual bending must have taken place, forcing the bone of the femur into adduction.

The day before yesterday the patient consulted him for a sciatic pain. He had contracted gonorrhœa two months ago, and in examining him I found a condition of things for which I take the liberty to solicit your attention and call forth your criticism.

You see here, immediately below the inner half of Poupart's ligament, a slight, but distinct, elevation extending a few inches down, and being situated somewhat nearer to the adductor side. One feels distinctly a swollen gland on top of this swelling, which, to the touch, seems to transfer a distinct and powerful pulsation isochronic to the radial and femoral pulse. One hears, also, a distinct bruit. The femoral artery can be traced right on the lateral edge of the swelling; but compression of this artery, also, above Poupart's ligament, seems not to have any effect on the pulsation. If, one, however, exerts a pressure on the tumor itself, deep toward the foramen obturatorium, the pulsation ceases. I have tried compression of the arteria obturatoria from the rectum, but I am not quite sure whether a large artery which I felt and compressed, was that vessel. Its isolated compression seemed not to have any decided effect on the pulsation in the tumor, but simultaneous compression of the external iliac seemed to stop it, or, at least, considerably to diminish it. I am inclined to assume, from the anatomical seat, its shape, consistency, and physical symptoms, that we have to deal with an aneurism, which seems to be furnished principally through the arteria obturia, but probably also communicates with the femoral or one of its main branches. I thought of the possibility, whether, perhaps, a small spiculum of bone, by gradual erosion of the arteria obturatoria, might have caused this aneurism.

DR. LANGE also presented a very interesting case of

PARTIAL RESECTION OF THE ELBOW-JOINT.

In this case an injury had taken place three months previously, and then soon ankylosed at an angle of 140°, with only a few degrees of motion. The capitum radis could be made out, and seemed to be in its proper position to the external condyle; a diagnosis of an oblique fracture of the humerus into the joint was made. There being a large protuberance on the inner side of the joint, which presented the outlines of the trachea, he thought that the outer half of the articular body of the humerus, together with the bones of the forearm, was dislocated outward, but on opening the joint a different condition was discovered. The condyles were almost normal, while, at the same time, an incomplete dislocation of the bones of the forearm was found to exist, so that the ulna articulated with the capitellum, the external condyle was dislocated outward and much thickened. After subperiosteal excision of the lower end of the humerus the wound was entirely healed at the end of three weeks, and the patient has motion of the joint now between the angles of 90° and 160°; at the same time he is steadily improving. The healing process took place under two dressings, and by first intention; there are both pronation and supination. The after-treatment consisted of passive motion and exercise, a light-jointed silicate splint with rubber muscles being worn, to assist him in using the muscles of his arm.

The splint, which had been exhibited by Dr. Lange on previous occasions, was then applied to the boy, and the method of exercising the muscles and securing further motion exhibited.

DR. WYETH remarked that if, as Dr. Lange suspected, aneurism of the obturator artery existed, the failure of pressure upon this artery (with the finger introduced into the rectum) to arrest pulsation in the tumor might be explained, by assuming that this was one of those instances in which this vessel had two origins, viz., one from the anterior branch of the internal iliac, and the other from the deep epigastric branch of the external iliac: a condition which he had seen in several subjects while making a series of dissections of the pelvis.

DR. GERSTER remarked that he thought there might be a possibility of the condition mentioned by Dr. Wyeth existing.

DR. LANGE said he had thought of that, but was compelled to exclude it, as at a certain point when pressure was made the pulsation stopped entirely.

DR. MCBURNEY thought the internal circumflex should not be excluded.

DR. LANGE asked what would be the best treatment for the case.

DR. STIMSON asked whether the tumor was increasing in size.

DR. LANGE replied that he had only detected it the day before, and the patient could give him no information on that point.

DR. SANDS remarked that it seemed clear that if this tumor is an aneurism it is not one of the usual kind—that is to say, not one of the femoral artery, but one which involves some branches of the internal and external iliac, and if that be the case and it is aneurismal in character, the treatment would be different from that commonly applied to aneurisms occupying this situation. He thought that under those conditions an operation involving the internal iliac might be necessary. At first, however, pressure in the rectum upon the internal or common iliac should be tried. He thought, however, that if operative procedures were decided upon, ligation

of the common iliac artery might prove necessary, and if he had such a case he would not postpone the operation very long. He would very much dislike to open such an aneurism, and he had no faith in treatment by medicine.

DR WEIR asked if he did not understand from Dr. Lange that external pressure controlled the pulsation.

Dr. Lange replied that it did, but the pressure had to be so intense that he thought the attempt should be made under chloroform. If this should prove a failure, he would prefer to tie the obturator artery first, fearing that the anastomosis might not be perfect enough to supply blood to the limb in case the common iliac was tied. It had seemed to him during an examination at his office that a large vessel inside of the pelvis, probably the enlarged obturator, was the principal feeder of the aneurism. He intended, however, to repeat the examination.

DR. WEIR called attention to the fact that pressure at one point arrested pulsation in the tumor. He would, therefore, before resorting to the methods proposed by Dr. Sands, first try external compression, having not long since shown a case of vertebral aneurism to the Society, which had been cured by compression under similar circumstances.

DR. SANDS said that in making his previous remarks he took it for granted the aneurism was fed from a double source; if from a single source, he might modify his expressions.

DR. STIMSON thought the youth of the patient would suggest that it was not an aneurism of the ordinary spontaneous kind, with fusiform dilatation of the artery, but more probably a pouched sac formed after wounding of the vessel. Such an aneurism would be suited to treatment by coagulation of its contents, induced by the introduction of coagulating substances; and, therefore, if compression failed, he would prefer such treatment to ligature of the common iliac.

DR. SANDS asked whether the insertion of a coagulating substance into the sac would not be a very serious matter.

DR. STIMSON replied that he did not think facts had proved it to be so. He meant solid bodies as well as fluids. Such substances had been introduced in intrathoracic and abdominal aneurisms without causing any serious reaction, although the patients had usually died from the progress of the disease.

DR. BRIDDON said in that case he would prefer the electrolytic action of the constant current to any other means except pressure.

DR. GERSTER remarked that in relation to the case of elbow-joint difficulty presented by Dr. Lange, he added his testimony as to the efficacy of the apparatus applied by him in the after-treatment of the patient; he had used it himself with the most satisfactory results, and it was so simple of application.

DR. POORE asked how long after the operation passive motion is commenced.

DR. LANGE replied, as soon as possible without exciting inflammation.

DR. LANGE then presented a case in which he had performed

RESECTION FOR ANKYLOSIS OF THE JAW,

giving the following history:

Girl, eight years of age, had scarlet fever and diphtheria in her third year, after that running ears and some deficiency in hearing. In her fifth year she suffered from measles, after which her mother noticed an increasing stiffness in her jaw. By and by the mouth became tightly closed, and remained so for the most of the time. Occasionally, however, the teeth could be more easily separated, when, also, hearing seemed to be improved.

At the time of admission to the German Hospital, slight mobility of the lower jaw could be made out, so that the blade of the knife could be put between the incisors, which, as a rule, overlapped each other, so that the lower ones were behind those of the upper jaw, and also to some distance backward. The lower jaw was abnormally small and slightly turned to the left, so that the middle line of the chin did not correspond to the middle line of the face. The left half of the bone seemed somewhat shorter than the right one. It was impossible to make out whether the ankylosis was seated principally in the left or right joint; the muscles seemed more active on the right. This, and the apparent shortening of the left jaw, led Dr. Lange to assume that the left jaw was the one affected.

The operation was done by an incision about one and a half inches in length, along the lower edge of the zygomatic arch (Koenig). In spite of that slight degree of motion, not a trace of the old joint could be found. Everything seemed to be changed into one bony mass, which, piece by piece, had to be dissected away. The operation was done strictly subperiosteally. After ten days, cicatrization was complete. At the end of the first week, exercises were made to increase the mobility of the jaw, which, immediately after the operation, did not allow of opening the mouth more than to about one centimetre distance between the incisors, so that Dr. Lange thought the other joint would have to be excised also. Very soon, however, the mobility increased; and now, about six weeks after the operation, the mouth can be opened to about one and a quarter inches.

It was very remarkable in this case, that, in spite of the complete bony ankylosis on one side, some slight mobility of the jaw existed before the operation. Dr. Lange had observed another case, where the ankylosis had been the result of an injury during birth. One blade of the forceps had caused, by pressure, gangrene of the soft parts above the left articulation, with complete ankylosis following. Dr. Lange operated upon the child at its sixth year of age. His jaw was less developed and abnormally small, as in the case presented. Both joints were excised, and also the coronoid process on the left, because its presence, through mechanical obstruction against the zygomatic bone, interfered with the attempts at motion. The result in this case was good and lasting until the child's death, which occurred about three years later, from tuberculosis.

DR. GERSTER then presented a patient on whom he had performed

CHISEL-EXSECTION OF MAXILLARY JOINTS FOR TRUE ANKYLOSIS.

Lina T., æt. fifteen, a semi-idiotic, rather anæmic girl, was admitted to the German Hospital, March 30, 1886, for a disability of opening the jaws. Her mother stated that, some years ago, the girl had a severe and

long-continued feverish illness, in the course of which a swelling of one cheek developed and pus was discharged from her mouth. Since then she was unable to open her jaws at all, and had to subsist on liquid food. On examination, a marked hemiatrophy of the left side of the face was noticed, together with a slight degree of microcephalism; no paresis of the cranial nerves. The upper and lower incisors were in close contact, and the greatest practicable force could not separate them or move them laterally, even in full anæsthesia. No cicatrices could be detected externally or in the oral cavity, nor was there anything noticeable in the outline of the osseous parts of the maxillary joints. Both masseters were found to form a sharply defined band of normal dimensions, but very great hardness. As the certain diagnosis by a true ankylosis was not possible, it was decided to cut the upper insertion of the left masseter, and eventually proceed to exsection of the left joint, where the origin of the disease was suspected to have been located, on account of the atrophy of the corresponding side of the face; atrophy, as a sequela of inflammations, being a plausible supposition. On April 3d, an incision along the lower edge of the zygoma enabled a division of the muscle, which was not followed by any improvement of the functional defect. Therefore, a vertical incision was added to the posterior end of the first incision, a triangular flap being thus raised, and the joint was exposed with some difficulty. This was due to the atrophy and smallness of the head of the inferior maxillary, which was found, together with the glenoid cavity, bare of cartilage. The head was removed with the chisel, without any trouble or mishap. But the immobility of the jaw remaining unchanged, it became evident that the principal trouble was located on the right side. On account of the duration of the operation, it was decided to postpone the exsection of the left temporo-maxillary joint to a later date. The wound, being sewed, healed promptly. On April 29th, ether was again administered, and a horizontal incision of two and a half inches was carried from the external meatus of the right ear forward along the zygomatic arch. The temporal vessels being doubly tied, were severed; and the region of the joint being exposed, it was found that a solid and rather massive bony union of the head and coronoid process with the temporal bone had formed, this mass exceeding the normal width of the head by about half an inch. A wedge of very hard ivory-like bone being removed by the chisel, the jaws could at once be separated freely, the distance between the incisors being four cm. On the 11th of May this wound was also healed, and the jaws could be separated by the patient herself to a distance of three cm. Chewing was practised without difficulty, and the function is excellent to this day. Regarding the causation, the presence of an inflammatory process is indubitable as an important element, probably in the course of a typhoid fever or acute inflammatory rheumatism. Whether the hemiatrophy was due to the presence of the ankylosis, is very doubtful; but it seems rational to assume that the atrophy of the temporo-maxillary joint of the left side was caused by the absence of the physiological stimulus of motion in the joint. The operation is rational and safe, and has yielded excellent results to other observers, abroad as well as at home. The horizontal incision, as devised by Bottom and König, has been found to be the better one, although deligation of the temporal artery cannot always be obviated.

The subject was discussed to some length at the Fourteenth Congress of German Surgeons.

DR. ABBE thought the chance of retaining the benefit gained was great.

DR. LANGE asked Dr. Gerster whether bony ankylosis occurred on both sides with his patient.

DR. GERSTER replied it was only on the left.

DR. LANGE remarked there was one special point of interest connected with these cases, and that was how to decide upon which side of the face the ankylosis was situated. He did not know of any guide to this, as in the case he had introduced he was uncertain before operating; but was led to assume that the left joint was affected from the fact that the left side seemed shorter.

DR. WEIR asked if the history of the ear trouble did not help him.

DR. LANGE replied that that occurred on both sides.

DR. GERSTER remarked that it was the same in his case; but he was mistaken, as the disease was on that side of the face which was better developed.

DR. LANGE presented a specimen of

ANEURISM OF THE ABDOMINAL AORTA TREATED BY THE INSERTION OF WIRE INTO THE SAC,

occurring in a man at the German Hospital. The patient, about forty-five years of age, was originally treated for syphilis but with no effect. Finally Loretta's operation was decided upon, viz., the entrance of wires into the sac after laparotomy: the aneurism, however, enlarged very rapidly both in the epigastric and lumbar region about the right kidney. One morning it became apparent that the blood had effused behind the peritoneum and in front as far as Poupart's ligament. A modification of the above operation was afterward decided upon by passing a needle through the viscera and into the sac and introducing the wires; the aneurism had become very much enlarged and the patient very anæmic. The first operation was done fourteen days ago. A puncture was made in the epigastric and lumbar region, and three metres of thin wire were used; the patient did not need any anæsthetic and the operation caused no disturbance. The swelling in the epigastric region gradually diminished and in the lumbar region it became harder: a few days later a swelling appeared near the liver; the needle was again inserted at that point and just above Poupart's ligament: a solution of chloride of sodium was then infused into the cephalic vein, the patient bearing it well, but yet the aneurism gradually increased. A second transfusion five days later caused slight improvement, but all further attempts were desisted from; the patient dying of pneumonia twelve days after the first operation.

The post-mortem showed the viscera so much displaced that the right kidney was pushed forward and lay near the edge of the liver at the ascending transverse part of the colon, while the stomach was somewhat dislocated to the left side: there was no trace of puncture in the epigastric region or in any of the interlying organs: probably the puncture had been made through the left lobe of the liver and into the sac. On the left side between the layers of the meso-colon the abdomen was filled with blood, but the principal mass was on the right side, where there was about a gallon or

more. The aorta showed extensive atheromatous degeneration. The aneurism was located immediately below the diaphragm and communicated with the aorta by a lengthy opening through the posterior side of the vessel; there was also erosion of the twelfth dorsal and first and second lumbar vertebræ; the walls of the sac were quite firm from organized fibrin, the sac was as large as two fists and was ruptured on its right side, the silver wire being distinctly shown as it had been entered into the cavities; presenting in one case distinct coagulation which had taken place around the substance, but in the other sac in which the wires had been introduced the wires were quite clean; the punctures were made at three different points as before stated, but by all appearances two wires entered the same cavity. Dr. Lange did not think that coagulation was bound to occur, and he could not say whether the immense clot found in the original sac was produced by the wires or not; but where previously there had been a strong pulsation, two days before death that pulsation was hardly perceptible, and the bruit had disappeared. He thinks that if the case had been taken earlier rupture of the sac could have been prevented and a cure effected even in this severe case.

DR. MCBURNEY asked how much wire had been used.

DR. LANGE replied twelve metres, or about thirty feet.

DR. BRIDDON remarked that the operation was performed many years ago by the late Dr. Gurdon Buck.

DR. GERSTER remarked that he was present at the operation by Dr. Lange and thought it much better than Loretta's method, which requires opening of the abdominal cavity; and at the post-mortem in this case it was proved there was no irritation caused by the introduction of the wire.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting November 2, 1886.

THE PRESIDENT, C. L. DANA, M.D., IN THE CHAIR.

A CASE OF BITEMPORAL HEMIANOPSIA.

DR. EDWARD WAITZFELDER presented the patient, a lad, whose general history was negative until five months ago. He then noticed a "blur" over the right eye. He consulted Dr. P. A. Gallan, at the New York Eye and Ear Dispensary, who diagnosticated right temporal hemianopsia. The condition grew worse; the left optic nerve became involved, and left temporal hemianopsia developed. The nasal fields of both eyes were unaffected. Two months ago the patient had choked disk in the right eye. His condition November 1st was as follows: No other basal nerve affected; he has complete bitemporal hemianopsia, the whole of fixation point being included in the seeing field. Theoretically the fixation should be dissected, but practically it never is; there is atrophy of both optic nerves, most marked in the right. Vision, R. E. $\frac{8}{CC}$; L. E. $\frac{20}{XX}$. Diagnosis: tumor of the chiasm in the anterior portion; pressure upon the fascicula cusciata of both optic nerves, the fasciculi laterali being as yet unaffected. There is no tubercular or syphilitic history. The rapid growth of the lesion points strongly in the direction of sarcoma.

So far as Dr. Waitzfelder could ascertain, this was the first recorded case in the English language. The point of special interest in the case was that the fixation point was "dodged" by the line of the hemianopsia. Why this was so he could not say, but it would seem to indicate that there was a special set of nerves intended only for extreme central vision.

Remarks were made on the case by Drs. Pooley, Webster, Starr, Leszinsky, and Bullard.

COCAINE AND THE SO-CALLED COCAINE HABIT.

DR. W. A. HAMMOND made some remarks upon his personal experience with some of the preparations of cocaine. He had used only the fluid extract, various wines, and hydrochlorate of cocaine. The fluid extract had been discarded by him two or three years ago, mainly because it had been badly borne by the stomach; it excited nausea and was disagreeable to the taste. He then began the use of the wines, but finding that they differed so much in their effects, he gave them up until he suggested to Thurber & Co. to try to make a wine of coca free from tannin and extractive matters, and they had, he believed, entirely succeeded in doing so. There were two grains of the hydrochlorate of cocaine to the pint of wine. With this preparation he had had an extensive experience, not only upon others, but upon himself. He has used it in spinal irritation with excellent results, results which could not be attributed alone to the wine, but in part to the cocaine. He had used it also as a general tonic and for fatigue. For some time past he had been in the habit of taking a wineglassful at the close of his day's duties, and with benefit; it certainly had a decidedly restorative effect, without being followed by a feeling of depression. He had also used it in some cases of dyspepsia with a very irritable state of the stomach. He supposed its action was by lessening the sensibility of the stomach, as it lessened sensibility when applied to other parts. It was remarkable to what an extent the irritability of the stomach was overcome by doses of two or three teaspoonfuls of the wine of coca repeated at intervals of fifteen or twenty minutes until half a dozen doses had been taken. If the first doses were vomited, the succeeding ones would be retained longer, until finally they were retained altogether. Cases of irritability of the stomach, due apparently to spinal irritation, had been relieved within a few hours by this treatment. Generally when he wished in any case to produce a powerful therapeutical effect he employed the salt.

Dr. Hammond here spoke briefly of the physiological effects of coca, and said that the first writer, Tschudi (?), who had described its effects upon the native Indians of South America, gave an exaggerated account of its baneful influence, and his ideas had been copied over and over again without the authority being given, until our minds had become thoroughly indoctrinated by them. That author said, among other things, that the coca rendered the teeth black, produced ulceration of the tongue, caused the breath to be fetid, the jaws to become ulcerated, the bones to soften, and rendered the patient an idiot. But subsequent observers said that such results must be entirely exceptional, as they had never seen them. If there was discoloration of the teeth, Dr. Hammond thought it might be accounted for by

the lime which the Indians mixed with the leaves, or by the presence of tannin.

There had recently been some very striking stories in the newspapers regarding the injurious effects of the drug upon persons who had become addicted to its use. In order to determine whether there was any truth in these statements, Dr. Hammond made some experiments upon himself. He first injected hypodermatically one grain of the hydrochlorate of cocaine, which caused an exhilaration of spirits and a happier state of mind than he had enjoyed during that day. He was unable to sleep that night until four or five o'clock in the morning, and when he got up he had a severe headache. He also had a large evacuation of urine. The effect of the drug was to produce an exhilaration such as would be produced by two or three glasses of champagne. The next night he injected two grains, which produced the same pleasant feeling, and, in addition, he felt an inordinate desire to write. He wrote eight or ten pages of foolscap, and thought it was the best that he had ever written, but the next morning he found that it was the most extreme nonsense. Each sentence was complete in itself, but no two sentences had any relation to each other. The first part was more incoherent than the latter. The next night he injected three grains, and although he again felt the disposition to write, he did not indulge it, but he talked a great deal and made speeches. He knew what he was about, and was able to restrain himself, but it was pleasant to speak. He went to sleep late and again awoke with a severe headache. It was a peculiar fact in his case that at the point of injection there always developed redness, and swelling stopping short only of an abscess.

He now had several hard spots on his arm, and waited four or five days, when he injected six grains of hydrochlorate of cocaine, three grains at two different places. He then felt decidedly "upset," yet he did not lose consciousness nor his relation to things. He gave instructions to his servants correctly, but he did not feel a strong disposition to write or to talk. He was unable to sleep at all that night. The injections were always followed by large evacuation of urine, and by headache next day, but without debility. Three nights later he injected eight grains with about the same effects. The next night he injected eighteen grains, making six different punctures, all inside of twenty minutes. He became intensely exhilarated, and was unable some hours afterward to recall what he did. He was in his office, but in some way got to bed, and the next day he found things in more or less disorder in his office. His headache remained for two days, and there was great action of the heart—palpitation; he could hear it beating on raising the arm to the head. Exaggerated action of the heart had also attended the smaller doses, but he experienced none of the horrible effects which are said to attend the use of the drug in large or continued doses; no disposition to murder, or commit acts of violence. He acquired no habit, he was able to quit its use at once. And regarding the cocaine habit, he would say that he had given the drug in doses of from one to five grains for three months to a lady suffering from exophthalmic goitre, and she was then able to discontinue its use without any difficulty. At no time did she manifest any loss of moral principle. She took two doses a day. From a theoretical standpoint perhaps cocaine should not be administered in this disease, but it proved beneficial in this case, for the heart's action, which had been increased, diminished, became steadier, and the patient felt much better. He also gave it for some months to a lady addicted to the opium habit, carrying the dose up to five grains injected once a day. It overcame the opium habit, and the patient failed to acquire the so-called cocaine habit. In this, and other patients to whom he had administered cocaine, it produced, as in his own case, extraordinary action of the heart, increased temperature and blood pressure, perspiration, and indisposition to sleep.

He had used a ten per cent. solution of cocaine, soaked in lint and applied to the vulva, for the relief of masturbation. But it had failed in one case, that of a girl four or five years of age. It had been ineffectual in boys, applied to the glans penis.

In three cases of melancholia in women who refused to speak, injections of hydrochlorate of cocaine had overcome the prolonged silence. The first was a marked case of melancholia with stupor, and the patient had not spoken for nine months. At the first sitting he injected one grain of hydrochlorate of cocaine. The patient then nodded or shook her head in reply to questions, but would not speak. At the next sitting three grains of the drug were injected, and within four minutes the patient replied to questions by yes or no, and within ten minutes she began to talk, and kept on talking, although incoherently. She did not sleep that night, and seemed to have pain in the head the next morning. The next injection of three grains caused the patient to talk, but less incoherently. This was a year ago, and the patient continued as melancholic as before, but she talked, if that was any advantage. Dr. Hammond had failed occasionally to induce patients to speak by injections of cocaine.

As to the cocaine habit, Dr. Hammond regarded it as similar to the tea or coffee habit, and unlike the opium habit. He did not believe there was a single instance of well-pronounced cocaine habit, the patient being unable to stop it at any time if he chose to do so. If a person were to continue its use for a long time he should be inclined to look for trouble with the heart rather than with other organs.

DR. J. B. MATTISON, of Brooklyn, could not agree with Dr. Hammond that there was not a cocaine habit. Within a few months he had had seven cases of the cocaine habit under his care, five in physicians, and two in druggists. He certainly believes there is such a thing as cocaine addiction. He regarded the drug as most dangerous and destructive of the tissues. In certain cases its action is more unfavorable even than morphine. The cases reported in newspapers he thought were founded on facts. In one instance he wrote to a physician asking whether the report was true that a certain doctor had been arrested in the street, under the influence of cocaine. The physician replied that it was true, that the doctor was a victim to cocaine. He could cite other similar cases.

In one instance a physician attempted to write a prescription for a patient, but instead wrote for the Sheriff to come and take him to jail. The effects of cocaine, so far as he had observed them, were similar to those described by Dr. Hammond, but besides the action of the heart, the great volubility, and the unrest, he had noticed

hallucinations and delusions, but no homicidal or suicidal tendency. In some cases there was marked emaciation. He thought the effects of the continued use of cocaine are more decided than those of the continued use of morphine. The patients whom he had treated had acquired the cocaine habit gradually, making comparatively small injections several times a day. Dr. Hammond seemed to think that no dose was toxic; but he regarded Dr. Hammond's case as exceptional, and he would not advise any physician to repeat the experiment.

DR. J. LEONARD CORNING thought there was a morbid fear of cocaine spreading throughout the community, and he thought the remarks of Dr. Hammond were timely, as they would tend to allay the prejudice against a most useful remedy.

DR. L. C. GRAY remarked that between Dr. Hammond on the one side, and Dr. Mattison on the other, there was considerable distance, and he did not know how the question could be solved except by further experience. Dr. Hammond's statement, that no cases had been reported by medical men, was a mistake. Cases had been reported in Europe, but they were not numerous.

DR. M. R. RICHARD said that about six years ago he had a case of despondency in a lady disappointed in love. This was in New Orleans, and a physician there told him that he was in the habit of using an infusion of coca leaves in such cases. He gave it to this woman with happy results. Three years ago he came to New York, and was unable to find any coca leaves. Taken in this manner the patient would not be likely to get a sufficient amount of the drug to acquire a habit.

THE PRESIDENT read a communication from Dr. C. H. Hughes, of St. Louis, in which he said: Most of the cases of cocaine habit seen by me have been mixed cases of opium, cocaine, and alcohol or ether inebriety, combined, or alternating; though I think I know of cases in which cocaine is the chief, if not the exclusive, reliance. But these patients are not reliable in their statements. I have not seen a physician addicted to cocaine who stuck to cocaine exclusively. The finale has generally been cocaine and opium and whiskey, and ether, and all the other neurotic stimulants. Opium is a much more agreeable stimulant, and most patients evidently try to get back to the fatal bliss of opium. I have never relied on cocaine alone in breaking up the opium habit. I never use cocaine to intoxication, and never regularly. My rule with cocaine cases, as I usually see them, is to get them back to plain opium, and then to break them of that, if advisable. Dr. Hughes referred to the fact, that in some cases cocaine produced poisonous effects.

THE PRESIDENT referred to thirteen cases of cocaine habit, reported by Dr. Erlenmeyer, and to a case reported by Bornemann. The subject, he said, had recently been discussed at the meeting of the German Congress of Physicians and Naturalists, when Dr. Smidt reported some cases of cocaine-morphine habit. The general opinion was that pure cocaine addiction was rare, but that the cocaine-morphine habit was not so, and was a very destructive and pernicious habit.

DR. HAMMOND, in closing the discussion, said he did not deny the existence of a cocaine habit; he only claimed that it was unlike the opium habit, for the patient could break it off at will. He was aware that patients addicted to the use of opium sometimes added cocaine, greatly to their detriment. As to cocaine being a poison, twenty, and even thirty-two grains had been taken without serious results. He differed from Dr. Mattison, who thought it was more injurious employed hypodermatically. But the patient came under its influence more slowly when it was taken into the stomach.

THE PRESIDENT reported, for Dr. Herman M. Biggs,

A CASE OF SUBACUTE SPINAL PARALYSIS,

and exhibited specimens of the cord and sciatic nerve. The case was characterized by gradual paralysis of the lower, and then of the upper extremities, with moderate atrophy. Later a slight anæsthesia of the lower extremities, no pain, loss of tendon reflexes, and no bladder troubles. The course was progressive. Death took place in five months. Autopsy. The patient was a male, aged sixty-two, not syphilitic. The interest in the case lay in the rarity of the affection, and especially of cases in which post-mortem observations had been made. Clinically it resembled mostly the subacute spinal paralysis of Duchenne, although that disease is very rarely fatal. It still more strongly resembles a chronic form of Landry's acute ascending paralysis, and gave support to Ross's classification of: 1, Landry's paralysis; 2, the subacute paralysis of Duchenne; 3, periependymal myelitis; and 4, progressive muscular atrophy, as inflammatory processes attacking the central gray matter of the cord, and distinguished by the greater or less acuteness of the process. The case was interesting, also, as showing that these paralyses are not always at least due to neuritis.

Dr. Dana showed sections of the lumbar and upper dorsal cord, which he thought presented evidences of a low grade of central myelitis. The anterior roots and the sciatic nerve were apparently normal.

NEWS ITEMS.

BOSTON.

(*From our Special Correspondent.*)

HARVARD'S TWO HUNDRED AND FIFTIETH ANNIVERSARY.—The celebration of the Two Hundred and Fiftieth Anniversary of the founding of Harvard University has been attended with much that is of interest to educated men, and especially to all of the professions, the medical profession no less than the others.

Of the four days over which the exercises extended, the last, which was designated as Alumni Day, was especially full of interest. The President of the United States, with several members of his Cabinet, and other invited guests from this country and abroad, and the officers of government and instruction of the University, and a long line of alumni formed in and near the library, and marched through the college yard to Sanders's Theatre, where were already assembled many ladies. The members of the various faculties, dressed in silk gowns and with Oxford caps, gave novelty to the procession.

In the theatre, and filling the ample balcony, were hundreds of ladies, including, Mrs. Cleveland, Mrs. Eliot, Mrs. Endicott, and Mrs. Robinson. On the stage, the two hundred seats were occupied by the guests, including the President of the United States, the

Secretaries of State, War, and of the Navy, Senator Hoar, Governor Robinson, the Mayor of Boston, the Sheriffs of Suffolk and Middlesex, delegates from universities and colleges, many distinguished invited guests, among them Prof. Leidy, Dr. John S. Billings, Dr. S. Weir Mitchell, and the members of the government and various faculties of the University. The body of the theatre was filled with the Alumni, the older classes entering first, beginning with the class of 1811. After all were seated, Chief Marshal Henry Lee called them to order, and Judge Devens, after a brief address of welcome, invited Professor Francis G. Peabody to begin the exercises with prayer. After the prayer, a chorus of one hundred and fifty men's voices in the gallery over the stage sang Gounod's "Domine Salvam Fac."

James Russell Lowell, who was greeted with great applause, then delivered a most finished oration, unsurpassed on such an occasion, and well worthy of careful reading by all intelligent and educated persons.

After more music by the Anniversary Chorus, Dr. Oliver Wendell Holmes read the poem. The chorus then sang "A Mighty Fortress is Our God," after which the honorary degrees were conferred upon many distinguished persons, among whom were three from the medical profession, Prof. Joseph Leidy, Dr. S. Weir Mitchell, and Dr. John S. Billings.

A benediction by Dr. A. P. Peabody brought to a close the morning ceremonies, which were in the highest degree dignified and impressive, and accompanied throughout by earnest and enthusiastic applause.

At two o'clock the procession reformed at Gore Hall and proceeded to Memorial Hall, the largest college hall in the world, where, surrounded by monuments of heroes and benefactors, the Association of the Harvard Alumni received their distinguished guests at dinner. During the banquet, Mrs. Cleveland, and the ladies accompanying her, entered the balcony; this was the signal for all to rise and greet her with great applause. On the dais sat many dignitaries, including the President of the United States, the foreign delegates and guests, the orator and poet of the day. The throng on the floor included men of all ages and of much distinction. The Alumni were fortunate in being presided over by Judge Devens, who most felicitously introduced the many noted speakers.

Of the speeches made, that by the President aroused unbounded enthusiasm, and the toast of "The Science of Medicine and Surgery" was ably responded to by Dr. Mitchell.

THE JAPANESE AND QUARANTINE.—The intelligent and independent judgment exhibited by the Japanese in their application of knowledge acquired in Europe and America is well exemplified by the port sanitary regulations, which the *Indian Medical Journal* states to have been enforced during the prevalence of cholera in 1885. All vessels from infected localities were subjected to medical inspection before any communication with the shore was allowed; if the crew and passengers were found healthy, the vessel was allowed to proceed; if there were cases of cholera on board, or the corpses of persons who had died of cholera, the vessel was detained, the patients removed to hospital, and the corpses burnt, or buried after being disinfected, according as the friends preferred; the vessel and the crew and passengers were disinfected, and then allowed to proceed. These reasonable regulations, founded upon a scientific knowledge of the disease and of the nature of infection, are in striking contrast with the panic-stricken haste with which many European nations impose their so-called "rigorous quarantine." The Japanese appear to possess the rare power of learning from the experience of others.

THE HYGIENIC MUSEUM OF BERLIN, presided over by Dr. Koch, was opened on October 11th. The collection is described as a very comprehensive one.

ELECTRICITY UTILIZED AS A MEANS OF PUNISHMENT.—An ingenious Swiss is said to have devised an electrical whipping apparatus which will inflict the requisite amount of pain without causing unsightly and inconvenient wheals.

THE DISADVANTAGES OF USING A BROOK AS A SEWER.—The presence of a small stream running through a village is very tempting to advocates of putting nuisances out of sight without regard to their ultimate disposal. When the stream becomes polluted by the drainage of the adjoining populated region some one is sure to suggest that it be arched over and made a sewer.

In general, it may be asserted positively that this is a bad plan. There may be exceptions occasionally to this broad assertion, but they are so rare as not to be worth taking into account in a general consideration of the question.

A small natural stream is liable to excessive fluctuations. In dry seasons its flow will be very slight, and after heavy showers it will be a turbid torrent. Any channel to carry its waters must be of a capacity many times greater than is needed for certainly nine-tenths of the time. The occasional flushes which it receives from storm-waters are not sufficient to keep it clean and sweet during the intervals of small flow and slight fluctuations.

A channel for conveying sewage-water ought to be adapted to keep itself clean by its natural flow as nearly as practicable, and to effect this object it must have a limited capacity and be capable of frequent flushing with a quantity of water only slightly in excess of the greatest flow likely to occur during the hourly fluctuations of the household use of water.

This fluctuation is theoretically, according to German experiments, between 38 and 190 per cent. of the average hourly flow during the day. According to some American experiments the variation lies between 55 and 130 per cent. of the average hourly flow. This flow is quite constant during the year, and it may safely be assumed that a sewer to act efficiently need not, and indeed ought not, to be larger than is essential to carry when full double the average daily quantity of sewage likely to reach it.

It is easy to see that the size and cost of such a sewer will be much less than that of arching over a natural water-course and making it large enough to convey flood-waters.

A small marginal sewer along each side of a water-course properly constructed, with its sides and grade determined by a competent expert engineer — not guessed at by a committee or a local surveyor unskilled in the subject—will cost less and be more effec-

tive, nine times out of ten, than will the water-course itself when arched over and sewage turned into it.

THE ALCOHOLIC RED NOSE.—*The Church of England Temperance Chronicle* states that the following appeared among the miscellaneous advertisements in a recent issue of the *Irish Times:* "How to Change the Color of an Alcoholic Red Nose.—Recipe, which is effectual in nine cases out of ten, may be had by sending postal order for 10*s.* to 'K.,' 738, this office." There is a very watchful worker in Dublin in the person of Mr. T. Wilson Fair, the energetic Hon. Secretary of the Dublin Total Abstinence Society, so it is not a matter for surprise that the quaint advertisement above quoted was immediately followed by this: "How to Change the Color of an Alcoholic Red Nose.—Don't waste 10*s.* Call over to the Coffee Palace, 6 Townsend Street, and in 99 cases out of 100, if you sign the pledge and keep it, your nose will assume its natural shape and color.—Alcoholic Red Nose Curing, 6 Townsend Street, Dublin."

THE DISPOSAL OF REFUSE.—The Whitechapel Board of Guardians are successfully adopting a plan for the effectual disposal of dust and refuse without danger to the health of the inhabitants, which is pursued by some other bodies. Under the supervision of Mr. W. La Rivière, the architect and surveyor to the Board, works on an extensive scale have been erected in Wentworth Street, where the contents of the East End dust-bins are simply cremated, the smoke being, by an ingenious process, purified of any noxious gases it may possess, and then carried away through an upcast shaft 180 feet in height. Taking the foundations into account, the whole structure is 213 feet in length. The refuse is brought up on an inclined plane in the dust-carts of the Board, and emptied out on a platform, whence it is immediately discharged into the "destructor," which consists of eight cells, placed back to back in pairs. These cells are very strong draught furnaces, which in a short space of time reduce the unsavory mass to a heap of clinker, which is taken out and carted away. The smoke makes its way to the shaft by an underground flue seven feet high and four feet wide. It is stated that a considerable saving will thus be effected. Up to the present, the Board have been obliged to cart the "dust" away to Bow, and sometimes to Temple Mills, a couple of miles, or perhaps more, beyond Stratford, at a cost of from 1*s.* 6*d.* to 3*s.* 6*d.* a load. By means of the "destructor," the refuse can be destroyed for 2½*d.* to 3½*d.* a load, and thus the cost of the freehold site and construction, amounting to about £13,000, will be speedily recouped. This favorable experience will, no doubt, influence the authorities of other districts.

METHOD OF REMOVING NITRATE OF SILVER STAINS.—Dip the fingers into a strong solution of cupric chloride. In about a minute the silver will be converted into chloride, and may then be washed off with sodium hyposulphite solution.

DILUTING SKIMMED MILK.—A novel defence, raising the question of the liabilities of milk-sellers, was made in a case which came before the Brighton magistrates on October 9th, when Mr. William Edwards, one of the members of the town council, was prosecuted by the corporation officials for selling skimmed milk adulterated with forty per cent. of added water. The offence was not denied, but the defendant's solicitor relied for the defence on the fact that, after a previous prosecution on a similar charge, Mr. Edwards had given formal notice to the chief constable, the borough officials, and all whom it might concern, that he had never intended, and did not intend to sell pure milk, but only skimmed milk and water, or milk adulterated with water. The stipendiary magistrate ruled that such a notice could not be held to absolve the defendent, inasmuch as, however widely circulated, it could not be considered to make it patent to the mind of every purchaser, that milk was sold to them adulterated with water. Still he thought the notice lessened the offence, as it showed there was no intention to deceive or be dishonest, and he consequently imposed a smaller fine than he would otherwise have done. Defendant was fined twenty shillings and costs, or seven days' imprisonment.

RESTRICTIONS ON VETERINARY PRACTICE IN FRANCE.—The French Minister of Agriculture has drafted the following resolution, which has since become a law: "No one who is not in possession of a diploma in veterinary medicine, granted to him by a French veterinary school, shall practise this branch of science in France." Any breach or evasion of this law is punished by a fine of from sixteen to four hundred francs for the first offence, and if the offence be repeated, a double fine, with from six to thirty days' imprisonment.

AN UNUSUAL CASE OF POISONING.—The papers have recently related a fatal case of poisoning from an overdose of podophyllum. A physician in Maine ordered, in a prescription, "Podophyllum, gr. ss." The last two letters were mistaken by the druggist for figures, and read "88." He thereupon dispensed the latter quantity, which was taken at one dose (as was presumably ordered for the correct quantity), death occurring soon after. The clinical history of the case is not given, but the toxic symptoms were probably those of an acute irritant poison. However much the physician may be blamed for his illegible writing, it is hardly conceivable any druggist could have given such a quantity of a powerful drug without at least verbal instructions to the customer as to its potency.

MEDICAL EDUCATION OF WOMEN IN EDINBURGH.—The reopening of the Extra-mural Medical School on Wednesday, October 20th, was marked by the readmission of women to medical education in Edinburgh, after an interval of more than twelve years. The first year's course comprises, as usual, anatomy and practical anatomy, chemistry and practical chemistry. The ladies' class consists at present of six students, most of whom have just passed the preliminary examination in arts held by the Educational Institute of Scotland on behalf of the Colleges of Physicians and Surgeons. The classes are conducted by Dr. Macdonald Brown and Dr. Stevenson Macadam respectively, and Dr. Sophia Jex-Blake is acting as organizing Secretary.—*British Medical Journal*, Oct. 30, 1886.

IS COCK-CROWING A LEGAL NUISANCE?—People vary very much in their susceptibility to noise, but to most

persons of a nervous temperament, an intermittent noise during the night-watches is distressing in the extreme. It is all very well to read how chanticleer proclaims the morn in the country, but it is quite another thing when he lives in a shed at the bottom of the next garden in London. As Carlyle said, it is not merely the distressing noise of his crow, but the agonizing suspense while the sleepless watcher waits for him to crow again. A householder bolder than his fellows has brought an action against the owner of a loud-crowing cock, and the grand jury has found a true bill, so that the case will shortly be tried at the Middlesex sessions. The proverbial uncertainty of the law forbids any confident anticipation that the decision will lead to any considerable transference of crowing cocks from central London to their proper home in the country; so much will depend on the disposition of the jurymen.

DEATH OF DR. JOSEPH G. RICHARDSON.—Dr. Joseph G. Richardson, Professor of Hygiene in the University of Pennsylvania, and a member of the Board of Health, died very suddenly of apoplexy, at his home, No. 3238 Chestnut Street, Saturday, November 13th.

Dr. Richardson was born in Philadelphia, January 10, 1836, and was graduated from the Medical Department of the University of Pennsylvania about twenty-five years ago.

After serving as Resident Physician in the Pennsylvania Hospital and Wills Hospital, he practised medicine in Western New York. He afterward returned to Philadelphia and resumed practice here.

He was a voluminous writer on hygienic subjects, being the author of several well-known works in the department of science and also of a *Handbook of Medical Microscopy* which is used as a text-book. He was an untiring student of hygiene and microscopy.

Dr. Richardson was a member of the County Medical Society, the College of Physicians, and various other medical organizations, as well as a corresponding member of La Société Française d'Hygiène.

He spent the past summer in Europe. While there he was duly accredited by the Board of Health, and at its request investigated various matters connected with the sanitation of cities, and especially their water supplies.

DEATH OF M. PAUL BERT.—A Paris dispatch announces the death, on November 11th, of M. Paul Bert, the French scientist and statesman. He was a native of Auxerre, where he was born October 19, 1833. He studied law and medicine in Paris, and in 1868 was appointed Professor of Physiology in the Faculty of Science of Paris. He devoted himself to physiological research, and made many valuable experiments by means of balloons to ascertain the conditions of existence at various altitudes. In August, 1875, he was awarded the biennial prize in the Institute in recognition of his scientific work. M. Bert was elected to the National Assembly by the Department of Yonne in 1872, and was reëlected in 1876 and 1877. He acted with the extreme Radicals, and advocated various educational schemes, especially an act to exclude the clergy and members of religious orders from the schools of France. When Gambetta came into power in 1881 M. Bert was made Minister of Public Instruction, and in April of the following year he was elected a member of the Academy of Sciences. Last January he was appointed Minister of France at Hué, the capital of Anam, and he was holding this position when he died. He published a number of scientific works and many political articles.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 9 TO NOVEMBER 15, 1886.

SMART, CHAS., *Major and Surgeon.*—Granted leave of absence for one month.—*S. O. 265, A. G. O.*, November 13, 1886.

LORING, L. Y., *Captain and Assistant Surgeon.*—Sick leave of absence further extended three months on surgeon's certificate of disability. To be relieved from duty in the Department of California, and, on the expiration of his present sick leave of absence, will report by letter to the Surgeon-General of the Army.—*S. O. 262, A. G. O.*, November 10, 1886.

MOSELEY, E. B., *Captain and Assistant Surgeon.*—Assigned to duty as attending surgeon in San Francisco, California.—*S. O. 94, Division of the Pacific*, November 1, 1886.

BARROWS, CHAS. C., *First Lieutenant and Assistant Surgeon.*—Ordered to report to the commanding officer at St. Francis Barracks, St. Augustine, Florida, for duty at Fort Marion.—*S. O. 180, Division of the Atlantic*, November 10, 1886.

MACAULEY, C. N. B., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for twenty days.—*S. O. 118, Department of Dakota*, November 8, 1886.

PHILLIPS, JOHN L., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for one month, with permission to apply at Headquarters of the Division of the Missouri for an extension of one month.—*S. O. 116, Department of Dakota*, November 2, 1886.

CROSBY, W. D., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort McDowell, Arizona Territory, to Fort Bowie, Arizona Territory.—*S. O. 110, Department of Arizona*, October 29, 1886.

MORRIS, E. R., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort Bayard, New Mexico, to Fort Thomas, Arizona Territory.—*S. O. 110, Department of Arizona*, October 29, 1886.

EWING, CHAS. B., *First Lieutenant and Assistant Surgeon.*—Ordered from Fort Supply, Indian Territory, to Fort Leavenworth, Kansas, for duty.—*S. O. 126, Department of the Missouri*, November 6, 1886.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING NOVEMBER 13, 1886.

AMES, R. P. M., *Passed Assistant Surgeon.*—To proceed to duty at Vineyard Haven, Massachusetts, as inspector, November 10, 1886.

URQUHART, F. M., *Passed Assistant Surgeon.*—Granted leave of absence for seven days, November 8, 1886.

WASDIN, EUGENE, *Passed Assistant Surgeon.*—Granted leave of absence for seven days, November 11, 1886.

MAGRUDER, G. M., *Assistant Surgeon.*—Relieved from duty at Norfolk, Virginia. Assigned to duty at Marine Hospital, Chicago, Ill., November 10, 1886.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1004 Walnut Street, Philadelphia.